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Non-Secret Formulas

By T. M. GRIFFITHS

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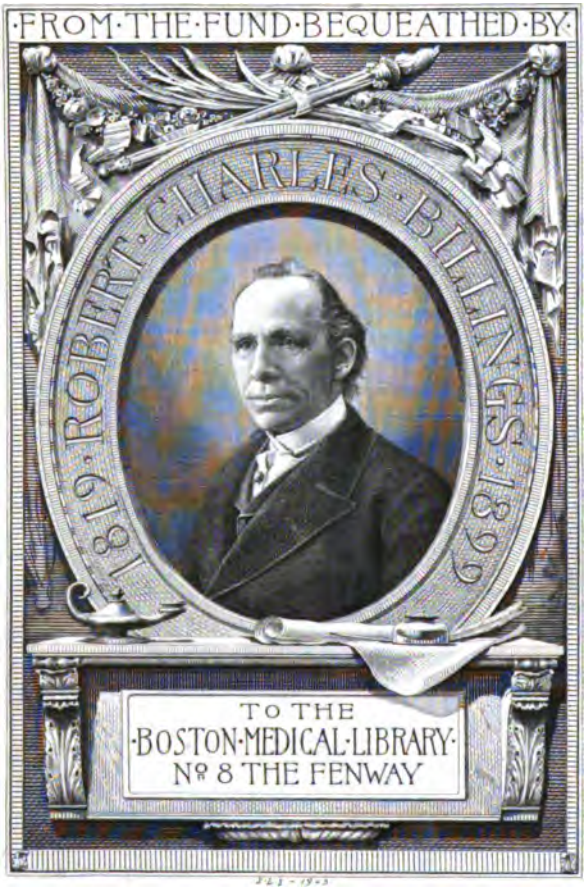
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Preface to the Second Edition.

To the wholesale, retail and manufacturing trade, who subscribed to the first edition, and to whose kind words of encouragement I owe the continuation of this work, I hereby tender my sincere thanks.

Notwithstanding the great care and expense that I have gone to in the preparation of this volume, I am fully aware of its numerous deficiences and imperfections, but I trust to the indulgence of those for whose benefit it is written and to the fairness of critics, who, while they find it easy to discover faults, can also appreciate the usefulness of a work of this kind.

T. M. GRIFFITHS.

4214 Olive street, St. Louis.

August 15, 1910.

INTRODUCTORY NOTES.

Where there are a variety of formulas to choose from it may be of some assistance if attention is called to a few for which I have a preference. The Syrups of Sarsaparilla with Iodide of Potash, on Page 1, sell well, give good satisfaction and afford a handsome profit. To those who wish to make a small quantity of similar goods, formulas for one gallon will be found on page 283. For a high grade goods, Iodides Alterative Compound, on page 316, will do excellent work, is not expensive, but good, and will with a little pushing and advertising, make a good specialty as those who buy it will recommend it highly. For Tonics, Calisaya Cordial, page 317. Phosphorox Tonic, page 325. Solution of Iron Manganese and Pepsin, page 323. Fluid Viburnum, page 9. Creosote and Guaiac Tonic, page 322 are dependable.

In Cough Syrups there is a wide choice. For goods that have merit and are not expensive, see pages 14 to 17; for higher priced goods, see Elixir of Heroin Co., at end of introductory notes. Elixir of Creosote and Heroin, pages 319 and 428, and Creosote and Guaiac Tonic, page 322, are excellent. The latter preparation is extensively used in Bronchial Troubles, etc. For Asthma remedies, Dick's Asthma Cure, page 20, is a good preparation and has given satisfaction, but the Asthma Remedy Special, page 440, is really the preparation that comes nearer to being a Specific for this distressing complaint than any that I am acquainted with. It will pay well to put it on the market. Catarrh Cures are covered on pages 21 and 22. Bergoline Oil Spray is very good. I have been making it for 20 years. (Be sure to use camphoric acid in its manufacture, not camphor.) This simple preparation for local application, and with it, for internal use, the formula on page 21 or the Iodides Alterative Compound, page 316 and good results will be obtained. Nerve Tonics on pages 7 and 24 are typical formulas.

For Laxatives and Aperients, the Fig Syrup, Castroilina and Purgative Tablets on page 29. Cascara, pages 276 and 441; Cathartic Elixir, page 318; Chionanthia Compound, page 318, and Hepatic Stimulant, page 322, are all good. There is a full line of liniments to select from. The newest Kastagon Liniment, page 292, is excellent.

For Pharmaceutical Preparations there is a wide range of desirable formulas, those on pages 315 to 327, scaled to one gallon quantities, comprise a standdard line of reliable goods. In Salves the Carbolic Ointment, page 35, is an excellent inexpensive Salve, but for something a little higher priced and without doubt the best all-round healing ointment, select the Universal Ointment. Page end of foot notes.

I have never seen a more useful piece of goods for diseases of the skin; it has a good record. For Chills and Fever, the Chocolate Quinine is a great favorite with the children; the preparation is more limpid than any that I have seen and therefore may be poured from narrow mouthed bottles; this is a distinct advantage. In Chill Tonics the Tasteless Chill Tonic with arsenic, page 27, and the Chill Tonic without arsenic, page 310, are recommended; also a good seller is the Syrup of Quinine Tasteless 5 grains, page 262. The formula for the Syrup of Quinine Tasteless 2 grains was omitted in error from page 262; it is prepared in the same manner as the 5 grain syrup, using only 2 grains of the Quinidine Alkaloid to each dram.

The Liquid Antipyretic, page 316, is sold in some localities under the name of Fever Drops; it is also well known as Headache Drops; it is a good Antipyretic and Analgesic. In Emulsions, Acamulsia and Acamulsia preparations will be found desirable for those who prefer fresh, wholesome emulsions. Terramenthaline, the Antiphlogistic, page 327, and Injections, brown and yellow, page 309, have had a good sale.

The Emulsion of Salol, page 287, the Dermalina Lotion, page 306, the Kola Syrup, pages 426 and 427, are the best than can be produced. There are hundreds of other formulas in Creams, Powders, Hair Colorers, Hair Dyes, etc., etc., that offer a choice to the seeker after specialties.

Of interest to the manufacturer of articles for the household are the formulas for Table Sauces—these are actual working formulas, no guess work—but "do it just so." The Sauce "that's just as good," on page 314, has a fine aromatic flavor and is a pungent appetizer. The Croft's Sauce, page 91, is a sauce of high grade quality. The Delmonico Sauce, page 92, is a second quality sauce in which the pressed marc from the Croft's Sauce may be used to advantage. For a quick process sauce costing but little, the East India Sauce, page 92, will give satisfaction.

The Baking Powders are standard goods, excepting the Quick Rising Baking Powder, page 94. Particular attention is called to this formula on account of its quality, cheapness and purity. Make up a small batch in ounces instead of pounds, or make a smaller quantity by placing 15, 17 or 64 threepenny French nails on an accurate scale and weighing separately the quantities indicated, using nails instead of ounces. Dry the powders separately, mix them well (see general directions for mixing Baking Powder, page 94), and make a batch of biscuits, using two teaspoonfuls of the powder to a quart of flour, well mixed in; bake quickly; the biscuits will be sweet, light and wholesome. The keeping properties of this powder are excellent, mainly on account of the large proportion of starch used in the mixture.

The Soluble Lemon and Orange Extracts, page 95, 261, 274, and Orangeadine, page 434, are useful formulas. The artificial extracts make high-grade goods which may be diluted if cheaper goods are desired; be sure to obtain good ethers, for instance Acetate of Amyl varies greatly, some brands have a gasoline odor that would ruin the best formula ever devised. This caution applies to other material used in manufacturing. Learn to be an expert in selecting good goods; not necessarily high-priced goods, but fine goods at a fair price. The Ginger Ale Extract, page 99, makes a choice flavoring for a higher grade ginger ale. The Brazilian Furniture Cleanser and Polisher, page 267, should have a large sale; it is inexpensive and does the work well. Salad Dressing, page 268; Ink Remover, page 268; Roach Paste, page 269; Bug Annihilator, page 270; Starch Gloss, page 270; Peanut Butter, page 273; Blue Black Ink, page 274; Mucilage, pages 82, 263, 443; Orange and Ginger Wine, page 275; Sweet Cider and Orange Cider, page 297; Raspberry Jelly, Concentrated, page 279; Pancake Flour, page 280; Tea Flavor, page 280; Tomato Catsup, page 281; Weed Killers, page 276; Essence of Smoke, page 277; Butter Color, pages 82, 277, 282; Metal Polishes and Lightning Paint Remover, page 443; Flavoring Powders, page 296; Ice Cream Powders for making and bulking ice cream, page 313; Breath Perfumes, page 427; Razor Paste, page 436; Shaving Powder, page 436; Washing Powders and Washing Liquids, pages 99, 309, 382, 383, 443; Egg Preservative Liquid, page 413;

Benzine Jelly, page 443; Bronzing Powder, Cheap, page 444, is a novelty that will prove popular; Cherridyne Wild Cherry Phosphate, without caffeine, page end of foot notes, will make a fine flavored beverage for the soda fountain trade; and Maple Syrup Flavor, page 429, makes an agreeable addition to simple syrup. Many other specialties may be found by a careful perusal of the work.

There is a growing demand from orchard men for Scale Killers, such as Sulphur Washes, Bordeaux Mixtures, Kerosene Emulsions, Copper Carbonate Solution, Arsenate of Lead, Formaldehyde Solution for potato scab and grain smut. Formulas for these will be found on pages 253 to 257. There is a great and growing demand for this class of goods, and on account of the rapid spread of orchard pests an immense business may be done in the near future. To those engaged in manufacturing Condition Powders for horses and cattle, selling to farmers, or anyone who wishes a live business requiring but little extra outlay, I commend this as a useful industry, affording good profits.

The articles on disinfectants and disinfecting and the various formulas thereon are of interest to all. In manufacturing great care should be exercised. In choosing good material, in weighing and measuring the respective quantities required, and in selecting handsome packages for the finished product, many a sale has been made by an attractive outside package, and many a fortune has been realized by a meritorious formula.

T. M. GRIFFITHS.

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FORMULAS OMITTED IN ERROR.

Cherridyne.

German Wild Cherry Juice	16 fl. ounces
Acid Phosphate Solution	8 fl. ounces
Simple Syrup	96 fl. ounces
Alcohol	1 fl. ounce
Oil of Bitter Almonds	3 drops
Oil of Rose	5 drops
Burnt Sugar Coloring	1 ounce
Water	38 ounces

Dissolve the oils in the alcohol and add to the other ingredients.

German Wild Cherry Juice is imported by Batjer & Co., 45 Broadway, New York City. It gives a fine fruity flavor to the drink, and is not expensive. The Acid Phosphate Solution may be increased if greater acidity is desired.

Elixir of Heroin Compound.

Heroin Hydrochloride	85 1-3 grains
Pilocarpine Hydrochloride	20 24-25 gr.
Ammonium Chloride	4 ozs., 298 grs.
Water	16 ounces

Simple Elixir Orange Flavor to make 128 ounces.

Each fluid dram contains one-twelfth of a grain of Heroin, one-fiftieth of a grain of Pilocarpine, and two grains of Muriate of Ammonia.

Universal Ointment, Improved.

Calomel	¾ ounce
Zinc Oxide	¾ ounce
Acetanilid, powdered	½ ounce
Boric Acid, powdered	½ ounce
Carbolic Acid	⅛ ounce
Hard Paraffin	1½ ounces
Lilywhite Petrolatum	6½ ounces
Oil of Sassafras	½ dram

Dissolve the Paraffin in the White Petrolatum by the aid of a gentle heat; mix the powders well and add to the Petrolatum and Paraffin (when sufficiently cooled), then add the Oil of Sassafras, mix well; this means mix it thoroughly. Small quantities of five pounds or less may be mixed to a smooth consistence in a graniteware dishpan ,by the aid of an ordinary pestle or potato masher. In making large quantities it is preferable to run the ointment through a paint mill after mixing well by hand. This is a good preparation in chronic ulcers, sore eyes, and a good all-round remedy for skin diseases.

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PART I.

NON-SECRET FORMULAS.

BLOOD PURIFIERS AND ALTERATIVES.

Syrup of Sarsaparilla with Iodide of Potash. A

106 gallons sugar house syrup.
51 gallons spirits, 188 per cent.
60 pounds iodide of potash.
34½ gallons distilled water.
5 gallons fluid extract sarsap. co.
2 gallons fluid extract dandelion.
2 gallons fluid extract senna.
2 gallons fluid extract columbo.
7½ ounces oil sassafras.
3¾ ounces oil anise.
1¾ ounces oil wintergreen.
64 ounces burnt sugar coloring.

Syrup of Sarsaparilla with Iodide of Potash. B

100 gallons sugar house syrup.
60 gallons spirits, 188 per cent.
76 gallons distilled water.
32 pounds iodide of potash.
5 gallons fluid extract sarsap. co.
2 gallons fluid extract dandelion.
2 gallons fluid extract senna.
2 gallons fluid extract stillingia.
2 gallons fluid extract yellow dock.
1 gallon fluid extract rhubarb.
12 ounces oil sassafras.
6 ounces oil anise.
3 ounces oil wintergreen.
64 ounces burnt sugar coloring.

Syrup of Sarsaparilla with Iodide of Potash.

62½ gallons sugar house syrup.
19 gallons spirits, 188 per cent.
15 pounds iodide of potash.
65½ gallons distilled water.
3⅛ gallons fluid extract sarsap. co.
1 9-16 gallons fluid extract dandelion.
1 9-16 gallons fluid extract senna.
1 9-16 gallons fluid ex. yellow dock.
8 ounces oil sassafras.
4 ounces oil anise.
4 ounces oil wintergreen.
40 ounces burnt sugar coloring.

Indian Alterative Medicine.

5 pounds ground sarsaparilla.
5 pounds ground prickly ash.
5 pounds ground burdock.
2 pounds ground poke root.
5 pounds ground stillingia.
2½ pounds iodide potash.

Percolate the drugs with proof spirits until five gallons extract is obtained; dissolve the iodide of potash in the extract.

This is a powerful alterative medicine.

Compound Extract Sarsaparilla with Iodide of Potash.

2 pounds ground stillingia.
1 pound ground may apple.
1 pound ground poke root.
1 pound ground prickly ash.
1 pound iodide of potash.

Percolate the drugs with proof spirits until five gallons extract is obtained; dissolve the iodide of potash in the extract and add
5 gallons syrup of sarsaparilla with Iodide of potash, formula "A."

Compound Extract Red Clover.

5 pounds ground red clover.
2½ pounds ground stillingia.
1¼ pounds ground poke root.
1 pound iodide of potash.

Percolate the drugs with dilute alcohol until five gallons extract is obtained; dissolve the iodide of potash in one gallon of distilled water and add—make up to 10 gallons with syrup of sarsaparilla and iodide of potash formula "A."

Syrup of Trifolium Compound.

24 pints fluid extract licorice root.
24 pints fluid extract red clover.
12 pints fluid extract stillingia.
12 pints fluid extract burdock.
6 pints fluid extract poke root.
3 pints fluid ext. prickly ash bark.
12 pints fluid extract berberis aquifolium.
12 pints fluid extract cascara bitterless.
20 pints glycerine.
20 pints alcohol, 188 per cent.
60 pints water.
120 pounds granulated sugar.
5½ pounds iodide of potash.
2 ounces oil sassafras.
1 ounce oil wintergreen.
½ ounce oil anise.

Sarsaparilla Blood Purifier.

Indorsed by the Illinois Pharmaceutical Association.

Potassium iodide .....240 grains.
Water ..... 2 fl. ounces.
Fld. ext. burdock..... 2 fl. ounces.
Syr. sarsaparilla comp... 8 fl. ounces.
Syrup (dextrin or sugar) enough to make..... 16 fl. ounces.

Dose: One to four teaspoonfuls according to age.

Blood Cleanser.

Potassium iodide ..... 64 grains.
Liquor potassa ..... 4 drams.
Tincture cardamon co..... 6 drams.
Fld. ext. sarsaparilla..... 1 ounce.
Tincture capsicum ..... 20 minims.
Syrup of orange..... 1 ounce.
Salicylate of soda.....128 grains.
Cinnamon water enough to make ..... 16 ounces.

Dose: One or two tablespoonfuls to be taken three times a day. Children, 1 to 3 teaspoonfuls in a little water twice a day. This medicine should be continued for at least 14 days.

Blood Mixture without Iodide of Potassium.

Liquor arsenicalis .....32 minims.
Potassium chlorat .....32 grains.
Fld. ext. sarsap. co..... 2 ounces.
Spirits chlorof..... 2 drams.
Aqua ad..... 8 ounces.

Dose: One tablespoonful to be taken three times a day after meals.

Robson's Blood Purifier.

Potash iodide .....32 grains.
Soda sulphate .....32 grains.
Potash liquor ..... 4 drams.
Syrup sarsap. co.....10 drams.
Spirits of wintergreen, 1 to 16 ..... 1 ounce.
Iron sulphate ..... 4 drams.
Chloroform water to make.. 8 ounces

Dose: One or two tablespoonfuls.

Blood Remedy.

Citrate iron and ammonia..2 drams.
Iodide potash .....2 scruples.
Liq. hydrarg. perchlor.....1 ounce.
Syrup simple .....1 ounce.
Water .....6 ounces.

Dose: One tablespoonful three times a day.

Blood Remedy for Scrofulous Disorders of the Blood.

Potassium iodide .....64 grains.
Soda sulph..... 1 ounce.
Liquor potassa..... ½ ounce.
Fld. ext. stillingia co.....2 ounces.
Fld. ext. sarsap. co.....2 ounces.
Cinnamon water ..... 3½ ounces.

Dose: One tablespoonful three times a day.

For Eczema, Patches on the Face, &c.

Liq. arsenicalis .....32 minims.
Tr. ferri perch..... 1 dram.
Magnesia sulph ..... 1 ounce.
Glycerine .....½ ounce.
Water enough for..... 8 ounces.

Dose: One tablespoonful three times a day.

For Hives or any Simple Cutaneous Disorder.

Magnesia sulph .....½ ounce.
Magnesia carb. powd..... 2 scruples.
Potassium nitrate ..... 2 scruples.
Tinct. ginger .....30 minims.
Tinct. cardamon co.....40 minims.
Peppermint water enough to make ..... 2 ounces.

Dose: Two tablespoonfuls to be taken at bedtime, and the remainder to be taken in the morning, if necessary.

Blood Purifying Mixture.

Potass. bicarb. .....1½ drams.
Potass. iodid. .....1 dram.
Liq. arsenicalis .....1½ drams.
Spt. chloroformi ..... ½ dram.
Ext. sarsae co.....2 ounces.
Aq. ad .....8 ounces.
M.

Dose: A dessertspoonful in a little water thrice daily, immediately after food.

The arsenic in it clears the skin, while as a tonic it is not inferior to quinine.

Blood Purifying Herbs.

Rad. sarsae inciss.....1½ ounces.
Chiratae ..... ½ ounce.
Rad. sassafras .....3 drams.
Succ. glycyrrhiz. contus.... ½ ounce.
Rad. zingib. contus.....2 drams.
Sem. coriand, contus.....2 drams.
Sodae bicarb.....1 dram.
Potassii iodid.....1 dram.
M.

Directions: Boil the contents of the packet with a quart of water for half an hour, stirring now and then. Strain the decoction through a piece of flannel into a scalded jug, and set aside to cool. Add a glass of whisky to preserve the decoction, and put it up in pint bottles. Take half a wineglassful before food three times a day.

Mixture for purifying the Blood.

Potass. iodid.....1 scruple.
Liq. taraxaci.....2 drams.
Dec. sarsae co.....6½ ounces.
Ol. sassafras.....1 minim.
Liq. potass..... ½ dram.
Mist. gent. co. conc.....1½ ounces.
M. S. A.

Dose: One tablespoonful.

Cheap Blood Purifier.

Sugar house syrup.....10 gallons.
Spirit of chloroform..... 2½ gallons.
Burnt sugar coloring..... ½ gallon.
Water distilled.....27½ gallons.
Iodide of potash..... 5½ pounds.
Liquor Potassa.....40 ounces.
Oil sassafras ..... 3 ounces.
Oil anise ..... 1 ounce.
Oil wintergreen..... 1 ounce.

Dissolve the iodide in the water, the oils in the chloric ether, and add to the syrup and coloring. Dose: One tablespoonful.

Alterative Juice Formula.

From the British Medical Journal as that given by J. Marion Sims.
Fld. ext. smilax sarsap.....2 ounces.
Fld. ext. stillingia.....2 ounces.
Fld. ext. burdock.....2 ounces.
Fld. ext. poke root.....2 ounces.
Tincture prickly ash.....1 ounce.

Sarsaparilla Purgative Mixture.

Fld. ext. sarsaparilla..... 1 ounce.
Fld. ext. licorice..... 1 ounce.
Fld. ext. senna..... 3 ounces.
Fld. ext. mandrake..... 1 ounce.
Glycerine ..... 2 ounces.
Iodide of potash.....64 grains.

Dose: One tablespoonful in water.

Extract Beef, Celery and Sarsaparilla.

Syrup sarsaparilla formula No. 3.....1 gallon.
Cudahy, Swift or Armour's fluid beef.....4 ounces.
Celery seed ground.....1 ounce.
Percolated with alcohol.....4 ounces.
And water.....8 ounces.

Mexican Extract Sarsaparilla.

Mexican sarsaparilla..... 5 pounds.
Yellow dock..... 5 pounds.
Stillingia ..... 5 pounds.
Mandrake ..... 7 pounds.
Senna leaves..... 7 pounds.
Licorice root..... 7 pounds.
Iodide potash..... 2 pounds.
Sugar house syrup..... 5 gallons.
Alcohol ..... 8 gallons.
Water q. s. to make.....42 gallons.

Macerate the drugs for 3 days, and percolate.

Blood and Liver Syrup, with Iron.

Iodide of potash.....256 grains.
Citrate of iron and ammonia .....256 grains.
Fluid extract senna..... 2 ounces.
Fluid extract licorice..... 2 ounces.
Water ..... 1 ounce.
Co. syrup of sarsaparilla... 11 ounces.

Dose: One to two teaspoonfuls in half tumbler of cold water, three times a day after meals.

TONICS, BITTERS, WINES, &c.

Iron Tonic Bitters.

Cinchona bark..... 1 pound.
Coca leaves..... 1 pound.
Soluble citrate iron.....½ pound.
Caraway seed..... 1 pound.
Gentian root.....½ pound.
Orange peel recent..... 3 pounds.
Red saunders.....¼ pound.
Water .....15 gallons.
Simple syrup..... 2 gallons.
Cologne spirits 188 per cent. 7 gallons.

Percolate the drugs with the spirits and water; add the simple syrup, and add enough California Port Wine to make the product measure 30 gallons.

Glover's Iron Tonic Cordial.

Fld. ext. casc. sag. bark..	2	pounds.
Fld. ext. gentian root.....	1	pound.
Fld. ext. chamomile flowers	1	pound.
Am. cit. iron.....	1	pound.
Oil orange	4	ounces.
Gran. sugar.....	30	pounds.
Alcohol	9½	gallons.
Sherry wine.....	2	gallons.
Water	36	gallons.

Glover's Iron Tonic Bitters.

Cinchonidia	3½	ounces.
Cinchonine	3½	ounces.
Quinine	1	ounce.
Sherry wine.....	25	gallons.
White sugar.....	105	pounds.
Oil orange.....	8	ounces.
Alcohol	15	gallons.

Water q. s. to make product 100 gallons, finally add 2 pounds am. cit. iron.

Wine of Iron (Bitter).

Cit. iron and ammonia....	128	grains.
Simple elixir.....	2	ounces.
Sherry wine.....	13	ounces.
Hot water.....	1	ounce.

Isinglass (q. s. to detannate wine).

German Herb Bitters.

Orange peel ground.....	8	ounces.
Coriander seed ground.....	1	ounce.
Gentian root ground.....	¼	ounce.
Ginger root.....	1	ounce.
Alcohol, 188 per cent.....	2	gallons.
Water	3	gallons.
Simple syrup.....	½	gallon.

Macerate the drugs for three days in a portion of the alcohol and water; percolate with the remainder of the alcohol and water, and run enough water through the percolator, until in all five gallons of the percolate is obtained; filter and add the simple syrup.

Roback's Bitters.

Orange peel	80	ounces.
Cassia bark ground.....	22	ounces.
Cloves ground	6	ounces.
Coriander ground	30	ounces.
Caraway seed ground.....	6	ounces.
Red saunders and caramel..	q. s.	
Proof spirits, 100 proof.....	18	gallons.
Water	12	gallons.
Sugar	4	pounds.

Macerate the drugs 7 days with a portion of the spirits and water, then percolate with the remainder; add the sugar and filter.

Walton's Bitters.

Orange peel	20	ounces.
Virg. snake root.....	14	ounces.
Cinchona bark, yellow....	8	ounces.
Coriander seed	6	ounces.
Anise seed	5	ounces.
Gentian root	5	ounces.
Wormwood herb	2	ounces.
Proof spirits, 100 proof...	31	gallons.
Water	8½	gallons.
Simple syrup	2	gallons.

Macerate the drugs 7 days and filter.

Samson's Bitters.

Cloves ground	3	ounces.
Cassia bark ground.....	5	ounces.
Licorice root ground.....	4	ounces.
Orange peel ground.....	22	ounces.
Coriander seed ground.....	14	ounces
Grains of paradise ground..	1	ounce.
Wormwood herb ground....	2	ounces.
Proof spirits, 100 proof.....	32	gallons.
Water	18	gallons.
Simple syrup	3	gallons.

Macerate the drugs with a portion of the spirits and water, q. s. to cover the drugs; in seven days percolate with the remainder of the spirits and water, filter, and add the simple syrup.

Wood's Wine of Iron Bitters.

Orange peel recent ground..10 ounces.
Coriander seed recent grd.. 2 ounces.
Cardamon seed recent grd.. 1 ounce.
California port wine.....10 gallons.
Cinchonidia sulphate ..... 2 drams.
Aromatic sulph. acid..... 2 drams.
Water ..... 2 pints.
Spirits, 188 per cent..... 1 pint.
Simple syrup ..... 2 pints.
Am. Cit. Iron..... 4 ounces.

Stoughton Bitters.

Orange peel ground.....16 ounces.
Angostura bark ground.....10 ounces.
Licorice root ground.....16 ounces.
Virg. snake root ground.... 5 ounces.
Galangal root ground..... 5 ounces.
Nutmegs ground ..... 2 ounces.
Cassia bark ground..... 5 ounces.
Powdered catechu ..... 2 ounces.
Spanish saffron ground..... 2 ounces.
Jamaica ginger ground..... 2 ounces.
Cardamon seed ground..... 2 ounces.
Red saunders ground..... 2 ounces.
Coriander seed .....10 ounces.
Caraway seed ..... 1 ounce.

Macerate the drugs for fourteen days with five gallons of proof spirits. Then percolate with proof spirits, until fifteen gallons of percolate is obtained. Run water through the percolator until two gallons of water has passed through; mix this with three gallons of heavy simple syrup, and add to the fifteen gallons, making the total product twenty gallons.

Wild Cherry Bitters.

Wild cherry bark ground..16 ounces.
Orange peel ground..... 8 ounces.
Cardamon seed ground... 2 ounces.
Coriander seed ground.... 4 ounces.
Grains of paradise..... 2 ounces.
Cologne spirits proof.....16 gallons.
Water ..... 9 gallons.
Simple syrup ..... 1½ gallon.

Macerate the drugs with a portion of the spirits and water, q. s. to cover the drugs; in seven days percolate with the remainder of the spirits and water, filter, and add the simple syrup. Color with burnt sugar coloring, if a darker color is desired.

Orange Bitters. A

Orange peel recent ground.. 5 pounds.
Coriander seed ground..... 2 pounds.
Lemon peel recent ground.. 1 pound.
Saccharine (1 to 300).....¼ ounce.
Cologne spirits 188 per cent. 8 gallons.
Distilled water .....12 gallons.

Dissolve the saccharine in the cologne spirits, macerate the drugs with a portion of the spirits and water, q. s. to cover the drugs; let stand for fourteen days, keeping well covered, then percolate with the remainder of the spirits and water; filter if necessary.

Orange Bitters. B

Orange peel recent grd... 2 pounds.
Coriander seed ground... ½ pound.
Cinchonidia sulphate ..... ½ ounce.
Orange flower water.....32 ounces.
Saccharin ..... ⅛ ounce.
Salicylic acid ..... ⅛ ounce.
Cologne spts. 188 per cent 1½ gallons.
Water ..... 7½ gallons.

Dissolve the saccharin, cinchonidia, and salicylic acid in two pints of the spirits, and set aside until needed. Macerate the drugs with six pints of spirits and six pints of water for seven days. Then place in a percolator and percolate with the remainder of the spirits and water; when percolation is finished, add the spirits containing the salicylic acid, saccharin and cinchonidia, filter if necessary, using blotting

or filtering paper, beaten into a pulp, and a canton flannel filtering bag, made so as to have the soft woolen nap on the inside of the bag. These directions for filtering are for large quantities and for rapid work. For smaller quantities the ordinary paper filter and glass funnel will do. Avoid any alkaline matter in filtering this preparation.

Blackberry Brandy or Cordial.

German cherry juice.....½ gallon.
Soluble essence of ginger...⅛ gallon.
Spirits proof .....½ gallon.
Simple syrup ..... 1 gallon.
Water .....¾ gallon.
Tincture of orris root.....4 ounces.
Caramel .....1 ounce.

Hop Tonic Bitters.

Hops ground ..... 1 pound.
Buchu leaves ground.....¼ pound.
Orange peel ground.....½ pound.
Gentian root ground.....¼ pound.
Cardamon seed ground.....⅛ pound.
Boiling water ..... 3 gallons
Cologne spirits 188 per cent. 1 gallon.
Saccharine (1 to 300).....⅛ ounce.

Pour the boiling water on the drugs. Let stand for five hours, and strain. Dissolve the saccharin in the spirits, add the cologne spirits and saccharin and filter.

Nerve Tonic in Debility.

Liq. strychniae ..... 5 minims.
Liq. arsenicalis ..... 3 minims.
Tinc. aurantii .....20 minims.
Tinc. zingiberis .....10 minims.
Sp. chloroformi .....10 minims.
Aq. destill. ad..... 1 ounce.

For one dose: Twice daily after meals.

Calisaya Tonic.

Orange peel ground..... 5 ounces.
Cinchona bark ground..... 5 ounces.
Cardamon seed ground..... 1 ounce.
Coriander seed ground..... 1 ounce.
Cologne spirits 188 per cent.32 ounces.
Water .....16 ounces.
Syrup simple .....32 ounces.

Percolate the drugs with the spirits and water, add the simple syrup and color with cochineal coloring, q. s.

Iron and Quinine Tonic A

Citrate of iron and quinine.128 grains.
Am. citrate of iron.....128 grains.
Glycerine ..... 2 ounces.
Orange bitters, B..... 14 ounces.

Dose: One teaspoonful.

Iron and Quinine Tonic. B

Tinc. citro chloride of iron.. 1 ounce.
Acid phosph. dilute..... 1 ounce.
Hydrochlorate of quinine... 1 scruple.
Glycerine ..... 4 ounces.
Orange bitters, B..... 14 ounces.

Dose: One to two teaspoonfuls in water.

Tonic for Nervous Debility. A

Acid hydrobromic dil..... 1 ounce
Acid phosphoric dil..... 1 ounce.
Tinct. nux vomica.....½ ounce.
Tinct. jam. ginger.....½ ounce.
Glycerine ..... 1 ounce.
Orange bitters, B.....12 ounces.

Dose: One tablespoonful three times a day before meals.

Aromatic Bitters.

Curacoa orange peel grd..1 pound.
Cinnamon bark true grd.. ¼ pound.
Gentian root ground..... ⅛ pound.
Nutmegs ground.....1-16 pound.

Cloves ground .....1-16 pound.
Cardamon seed ground....1-16 pound.
Cologne spts. 188 per cent.3 gallons.
Water .....5½ gallons.
Simple syrup ..... ½ gallon.

Macerate the drugs for seven days with a portion of the spirits and water, then percolate with remainder; filter and add the syrup.

Tonic Blood Mixture.

Tincture nux vomica..... ½ ounce.
Fl. extract stillingia..... 2½ ounces.
Liquor arsenicalis.....36 minims.
Bichlor. hydrarg ..... 1 grain.
Potassium iodide .....30 grains.
Alcohol ..... 1 dram.
Saccharin ..... 5 grains.
Cinnamon water to make.12 ounces.

Dose: One to two tablespoonfuls three times a day after meals. This is a powerful alterative and tonic and very valuable in scrofulous and syphilitic affections.

Spring Blood Renovator.

Sulphate magnesia ..... 8 ounces.
Hyposulphite soda ..... 4 ounces.
Iodine resublimed .....60 grains.
Simple syrup .....10 ounces.
Alcohol, 188 per cent.....10 ounces.
Tincture capsicum .....30 minims.
Oil sassafras .....10 minims.
Oil wintergreen..... 5 minims.
Caramel ..... 1 ounce.
Liquor potassa ..... 1 dram.
Water q. s. to make.....60 ounces.

Tonic for Nervous Debility. B

Hypophosphite potash ... 1 ounce.
Water ..... 4 ounces.
Fl. ext. coca leaves..... 4 ounces.
Fl. ext. damiana ..... 4 ounces.
Fl. ext. nux vomica..... ¼ ounce.
Acid hydrobromic dil.... 4 ounces.
Simple elixir, red, q. s. to make .....60 ounces.

Dose: One to two dessertspoonfuls three times a day before meals.

Mist. Acid Tonic.

Acidi nitrici diluti..... 7 minims.
Acidi hydrochlorici diluti... 8 minims.
Aquae chloroformi ..... 2 drams.
Inf. gentianae ad..... 1 ounce.

Tonic Mixture Alkaline. A

Ammonia carb..... 4 grains.
Soda bicarb.....10 grains.
Infusion gentian co..... 1 ounce.

For one dose.

Tonic Mixture Alkaline. B

Cit. iron am..... 2 drams.
Soda bicarb ..... 1 dram.
Spirits ammonia arom.... 3 drams.
Tinct. nux vomica..... 1½ dram.
Aqua chlorof. to make.... 6 ounces.

Dose: One tablespoonful three times a day after meals.

Calisaya Bark and Iron Cordial.

Sulphate quinine .....90 grains.
Sulphate cinchonia .....60 grains.
Citric acid .....20 grains.
Simple elixir, red..... ½ gallon.
Sol. citrate iron..... 2½ ounces.
M. S. A.

Coca Leaves Cordial.

Simple syrup .....64 ounces.
Proof spirits .....44 ounces.
Fluid extract coca leaves. 8 ounces.
Tincture orange peel.... 8 ounces.
Water ..... 4 ounces.
Citric acid ..... ½ ounce.

Coca Wine.

Coca leaves ground..... 1 pound.
Cologne spirits 188 per cent. 32 ounces.
Water .....32 ounces.
Oil orange .....64 minims.
Oil lemon .....16 minims.
Oil coriander ..... 4 minims.
Oil anise ..... 2 minims.
California muscatel wine... 4 gallons.
Sugar ..... 2 pounds.
M. S. A.

Orange Wine. Artificial.

Water ..... 9 gallons.
Granulated sugar ..... 5 pounds.
Tartaric acid ..... 8 ounces.
Oil of orange ..... 2 ounces.
Alcohol ..... 1 gallon.
Orange flower water ..... 1 pint.
Salicylic acid .....20 grains.

Dissolve the oil of orange and salicylic acid in the alcohol. Dissolve the tartaric acid and sugar in the water, and mix with the alcohol. Color with caramel one ounce.

Cascara Cordial.

Cascara sagrada ground.. 1 pound.
Senna leaves ground.... ½ pound.
Licorice root ground..... ½ pound.
Sal soda powdered..... ⅛ pound.
Water .....48 ounces.

Mix the drugs thoroughly, and macerate with the water for twelve hours, place in a percolator and percolate with a mixture of

Alcohol .....32 ounces.
Water .....16 ounces.

to the percolate obtained add

Oil cardamon .....30 minims.
Oil anise .....15 minims.
Oil orange .....15 minims.
Oil angelica German.....15 minims.
Saccharin .....30 grains.
Dissolved in alcohol..... 8 ounces.

Continue the percolation of the drugs with water until seven pints in all are obtained; in this dissolve granulated sugar 3 pounds, and strain.

Fluid Viburnum Compound.

Cramp. bark, powdered..... 6 ounces.
Scull cap, powdered..... 3 ounces.
Wild yam powdered ..... 6 ounces.
Cloves, powdered ..... 6 ounces.
Cinnamon, powdered ..... 3 ounces.
Alcohol, 188 per cent.....90 ounces.
Water .....24 ounces.
Syrup simple ..... 9 ounces.

Percolate the drugs with the spirits and water, and add the syrup to the percolate.

Dioscorea Mixture.

Cramp. bark, powdered.... 4 ounces.
Helonias, powdered ..... 4 ounces.
Blue cohosh, powdered .... 4 ounces.
Squaw vine, powdered..... 4 ounces.
Oil anise .....20 drops.
Oil wintergreen .....16 drops.
Alcohol, 188 per cent.....10 ounces.
Water .....50 ounces.
Caramel ..... 1 ounce.
Angelica wine, sweet.....16 ounces.

Quinine and Iron Mixture.

Quininae sulph ..... 1½ drams.
Acid, nitric, dil..... 2 drams.
Tr. ferri perchlor..... 2 ounces.
Glycerini ..... 1 ounce.
Aq. chloroformi ad.....20 ounces.
M.

Dose: A dessertspoonful in a wineglassful of water thrice daily.

This mixture keeps well, the nitric acid counteracting the reducing effect of glycerine and light upon the ferric salt.

Kola Coca Wine.

Kola nuts ground..... 2 ounces.
Coca leaves ground..... 2 ounces.
Spirits, 188 per cent..... 6 ounces.
Water ..... 4 ounces.

Muscatel, angelica, sherry, port or claret or a mixture of half port and half claret wines as may be preferred; q. s. to make 32 ounces.

Macerate the coca and kola with the spirits and water for seven days; percolate and run enough wine through the percolator to make 32 ounces.

Aromatics—such as cardamom, coriander and orange can be added if considered desirable.

Coca Wine.

Coca leaves ground ..... 4 ounces.
Spirits, 188 per cent..... 6 ounces.
Water ..... 4 ounces.
Hydrobromic acid dil.... ½ ounce.

Muscatel, angelica, sherry, port or claret or a mixture of one-third port to two-thirds of claret wine as may be preferred; q. s. to make 32 ounces.

The latter mixture is preferable if desired to replace Vin Mariani.

Pepsin Wine. A

Pepsin scales .....256 grains.
Hydrochloric acid ..... 60 minims.
Distilled water ..... 2 ounces.
Glycerine ..... 2 ounces.
Sweet muscatel wine..... 12 ounces.

Dissolve the pepsin in the water and acid, let it stand with occasional agitation for three days, add the wine and glycerine, strain, or filter if desired.

Pepsin Wine. B

Pepsin saccharated .....256 grains.
Hydrochloric acid ..... 60 minims.
Distilled water ..... 2 ounces.
Simple elixir white..... 2 ounces.
Sweet muscatel, sweet angelica or sherry wine. 12 ounces.

Dissolve the pepsin in the water and acid, let it stand with occasional agitation for three days, add the wine and filter, then add the simple elixir. An additional two ounces of wine may be substituted for the simple elixir if preferred.

Wine of Damiana.

Fl. ext. of damiana..... 2 ounces.
Simple elixir white..... 2 ounces.
Sherry, sweet angelica or sweet muscatel wine.....12 ounces.
Mix.

Wine of Damiana Compound.

Hypophosphite of potash.640 grains.
Distilled water ..... 2 ounces.
Fl. ext. of damiana..... 2 ounces.
Fl. ext. of nux vomica... 30 minims.
Fl. ext. of coca leaves... ½ ounce.
Acid hydrobromic dil.... 2 ounces.
Dry sherry wine ..... 8 ounces.
Glycerine enough to make ..... 16 ounces.

Wine of Beef.

Extract of beef..... 1 ounce troy.
Simple elixir white.... 2 ounces.
Sherry or port wine enough to measure...16 ounces.

Wine of Beef and Iron. A

Extract of beef..... 1 ounce troy.
Cit. iron am. or.....
Phosphate iron, scales..64 grains.
Hot water ..... 1 ounce.
Simple elixir white..... 2 ounces.
Detannated port or sherry wine enough to measure .....16 ounces.

Port wine is preferable to sherry in this preparation.

Rub the extract of beef with the elixir, add the wine, dissolve the iron in the ounce of hot water, and mix; let stand for at least four weeks and filter.

This is an excellent preparation. A tablespoonful represents one ounce of fresh beef and two grains of iron.

Wine of Beef and Iron. B

Extract of beef.....	½ ounce troy.
Cit. iron am. or.....	
Phosphate iron, scales.	64 grains.
Hot water	1 ounce.
Simple elixir white...	2 ounces.
Detannated port or sherry wine enough to measure	16 ounces.

Prepare in the same manner as formula A.

Celery Compound.

Celery seed ground.....	16 ounces.
Sulphate of cinchonidia..	½ ounce.
Orange peel ground.....	8 ounces.
Coriander seed ground...	8 ounces.
Citric acid	4 ounces.
Alcohol	4 gallons.
Water	12 gallons.
Syrup	2 gallons.

Macerate for seven days; percolate and filter. Color with caramel 14 ounces.

Bitter Wine of Iron. A

Soluble citrate iron and quinine	580 grains.
Tincture sweet orange peel.	4 ounces.
Simple syrup	10 ounces.
Sherry wine detannated q. s. to make.....	2 pints.

Dose: One-half to one tablespoonful.

Bitter Wine of Iron. (Mitchell's.) B

Calisaya bark ground.....	192 grains.
Gentian root ground.....	128 grains.
Citrate iron soluble.....	192 grains.
Sherry wine	13 ounces.
Brandy	1 ounce.
Alcohol	1 ounce.
Oil orange	12 minims.
Sugar	2 ounces.
Solution tersulphate of iron	2 ounces.
Water of ammonia q. s.	

Dissolve the oil in the alcohol and mix with the sherry wine and brandy. Percolate with this the ground drugs, recover 15 fluid ounces of tincture by pouring on water. Dilute the iron solution with twice its bulk of water and add ammonia in slight excess. Wash and drain the precipitate thoroughly. Mix this with the tincture, and agitate occasionally until a filtered portion has a light yellow color and does not precipitate with tincture of the chloride of iron. Filter, dissolve the citrate of iron and sugar, and bring up the measure with a little water to 16 fluid ounces; a fluid ounce represents 12 grains of calisaya bark, 8 grains of gentian root, and 12 grains of citrate of iron. Dose, one to three fluid drams.

Wine of Rhubarb.

Rhubarb powdered	3¼ ounces.
Calamus powdered	140 grains.
Sherry wine, stronger, q. s. to make	2 pints.

Moisten the mixed powders with three ounces of the wine. Place the mixture in a percolator and run through enough wine to make two pints.

Dose: One to four fluid drams.

TOOTHACHE.

Aromatic Wine.

Lavender oil .....10 minims.
Origanum oil .....10 minims.
Peppermint oil .....10 minims.
Rosemary oil .....10 minims.
White thyme oil .....10 minims.
Wormwood oil ..... 5 minims.
Alcohol ..... 1 ounce.
Sherry wine .....15 ounces.

Dissolve the oils in the alcohol and add the wine. This wine is used as a stimulating lotion for indolent ulcers.

Toothache.

Chloral .....
Camphor .....
Menthol .....

Equal parts, rubbed up together to form a syrupy liquid.

To be rubbed on the part affected.

Ac. carbol ..... 2 drams.
Camphorae ..... 3 drams.
Menthol ..... ½ dram.
Chloroformi ad ..... 1 ounce.

Toothache.

Thymol .....15 grains.
Menthol .....15 grains.
Cocainae ..... 1 grain.
Chloroformi pur. ..... ½ ounce.

Mix.

A few drops on cotton-wool to be inserted in the cavity of the tooth.

Neuralgic Pills.

Phosphori .....1-50 grain.
Stychniae .....1-32 grain.
Ferri redact. ..... 1 grain.
Quinae sulph. ..... 1 grain.
Zinci val. ..... 1 grain.

Ft. pil. Dose: One 4 ter horis.

RINGWORM.

Ringworm.

Calomel ..... 1 dram.
Tinct. iodine ..... 1 ounce.

M.

Sig.: Paint the clear liquid to the part night and morning.

Don't shake the bottle. This remedy is unfailing.

CHILDREN'S MEDICINES.

The staff of the Evelina Hospital for Sick Children, Southwark, London, have recently published a second edition of the Pharmacopoeia of the hospital, through Messrs. J. & A. Churchill, 7 Great Marlborough Street, W. The little book contains a large number of good prescriptions for children, and as this is a department of knowledge which it takes the general practitioner a long time to master, we are not surprised to hear that the first edition of the work was quickly exhausted. Perhaps the best way to convey an idea of the Pharmacopoeia is to quote a few of the prescriptions, which we accordingly subjoin.—"Chemist and Druggist, London."

Linctus Infantilis.

Take of—
Compound tinc. of camph. 2½ minims.
Peppermint-water to ..... 1 fl. dram.
Ipecacuanha wine ..... 2½ minims.
Glycerine .....20 minims.
Mix.

Dose: One fluid dram.

Mistura Bismuthi Sedativa.

Take of—
Carbonate of bismuth.... 3 grains.
Carbonate of sodium .... 3 grains.
Solution of hydrochlorate of morphine ..... 1½ minims.
Compound powder of tragacanth ..... 1¼ grains.
Dill-water to ..... 1 fl. dram.
Mix.
Dose: One fluid dram.

Mistura Carminativa.

Take of—
Aromatic spirit of ammonia. 2 minims.
Tincture of ginger..... 1 minim.
Compound tincture of cardamoms ..... 3 minims.
Dill-water to ..... 1 fl. dram.
Mix.
Dose: One fluid dram.

Mistura Stomachica.

Take of—
Carbonate of sodium .... 2 grains.
Syrup of ginger ..... 2½ minims.
Aromatic spirit of ammonia ..... 4 minims.
Infusion of rhubarb .....30 minims.
Compound infusion of gentian to ..... 1 fl. dram.
Mix.
Dose: One fluid dram.

Pulvis Acidi Borici Compositus.

Take of—
Powdered boric acid .....
Powdered starch .....
Powdered oxide of zinc.....
equal parts.
Mix.
For local application.

Pulvis Santonini Compositus.

Take of—
Santonin ..... 1 grain.
Compound powder of scammony ..... 2½ grains.
Calomel ..... ½ grain.
Mix.
Dose: Four grains.

The dose in each case is for a child six months old. It is a pity that brief notes on the uses of the preparations are not added.

Cough Mixture for Children.

Ammon. carb.....15 grains.
Vin. ipecac..... 2 drams.
Syr. scillae ..... 3 drams.
Syr. limonis ..... 1 ounce.
Tr. croci .....10 minims.
Aq. ad ..... 3 ounces.
M.
Sig.: For children of one year and upwards a teaspoonful to a dessertspoonful, according to age, thrice daily.

Whooping Cough Mixture.

Codeinae ..... 1 grain.
Acid. phosphoric, dil..... ½ dram.
Dissolve and add—
Acid. hydrocyan, dil..... 8 minims.
Syr. tolutan..... 1 ounce.
Aq. ad..... 4 ounces.
M.
Dose: A teaspoonful every four hours.

COUGHS, COLDS, ETC.

Adam's Cough Cure.

Syrup wild cherry..... 24 ounces.
Syrup tar .....16 ounces.
Syrup squills .....12 ounces.
Syrup ipecac ..... 4 ounces.
Tinct. opium camphorated 4 ounces.
Tinct. Sanguinaria..... 2 ounces.
Chloroform ..... ½ ounce.
Arom. spts. ammonia.... 1 ounce.
Caramel ..... ½ ounce.

Standard Cough Syrup.

Syrup squills ..... 1 gallon.
Syrup tolu ..... 1 gallon.
Syrup ipecac ..... 1 gallon.
Paregoric ..... 1 gallon.
Chlorodyne ..... 8 ounces.
Muriate ammonia .....32 ounces.

Add the chlorodyne to the syrups. Dissolve the muriate of ammonia in as little water as possible and mix altogether.

Brompton Hospital Cough Specific.

Brompton Hospital Cough-specific, copied from the original recipe of the late Charles Hardy, Fulham Road, London:

Molasses .....64 pounds.
Water ..... 3½ gallons.
Chloroform ..... 2 ounces.
Essence of lemon..... 2½ ounces.
Laudanum .....40 ounces.
Dilute sulphuric acid.....40 ounces.

Mix.

Bronchelixir.

Tinct. opium camphorated 4 ounces.
Spirits nitrous ether..... 2½ ounces.
Spirits am. arom..... 1½ ounces.
Tinct. senega..... 1½ ounces.
Wine of antimony..... 1 ounce.
Spirits of chloroform.... 1 ounce.
Spirits of camphor..... ¾ ounce.
Glycerine ..... 3¾ ounces.

Mix the above in order printed; let stand for 48 hours, then filter. Dose: Adults one teaspoonful to be taken in a wineglass of water two or three times a day.

Children from ¼ to ½ a teaspoonful, according to age.

Balsam of Honey and Aniseed.

Tincture balsam, tolu, soluble .....16 ounces.
Honey .....32 ounces.
Syrup simple .....24 ounces.
Water .....16 ounces.
Alcohol ..... 8 ounces.
Oil anise ..... ¼ ounce.
Muriate of ammonia..... 4 ounces.
Tartar emetic .....48 grains.
Sulphate of morphia.....48 grains.
Caramel ..... ¼ ounce.

M. S. A.

Adult dose: One teaspoonful.

Rock Candy, Hoarhound and Tolu.

Rock candy syrup..... 8 gallons.
Hoarhound ..... ½ pound.
Tincture balsam, tolu, soluble ..... ½ gallon.
Chloroform ..... 4 ounces.
Muriate of ammonia..... 8 ounces.
Tartar emetic .....320 grains.
Sulphate of morphia....320 grains.
Oil bitter almonds.....320 minims.
Alcohol ..... 1 gallon.
Caramel to color..... 4 ounces.
Water q. s. to make..... 10 gallons.

Make an infusion of the hoarhound with 3 pints of the water, and add to the syrup then add the soluble tolu.

Dissolve the muriate of ammonia, tartar emetic and sulphate of morphia in another portion of the water. Dissolve the oil of bitter almonds and chloroform in the alcohol. Mix and add enough water to measure ten gallons. Color with caramel.

Adult dose one teaspoonful.

Tar, Tolu and Wild Cherry.

Syrup simple ..... 6 gallons.
Syrup of wild cherry.... 1 gallon.
Pine tar ..... 1 ounce.
Carb. magnesia ..... 2 ounces.
Sweet spirits nitre..... 16 ounces.
Tinct. balsam tolu, soluble ..... ½ gallon.
Muriate of ammonia.... 8 ounces.
Tartar emetic .....320 grains.

Sulphate of morphia....320 grains.
Oil of bitter almonds....160 minims.
Alcohol, 188 per cent.....1 gallon.
Caramel ..... 4 ounces.
Vinegar of squills ..... 32 ounces.
Water q. s. to make.... 10 gallons.

Rub the pine tar with carb. magnesia in mortar; add one quart of boiling water; agitate well and let stand for twelve hours; filter and add to the syrups. Add vinegar of squills, tinct. balsam tolu and caramel, separately. Add the sweet spirits nitre and oil of bitter almonds to the alcohol and mix with the syrups.

Dissolve the muriate of ammonia, morphine and tartar emetic in the remainder of the water and add; stir well and strain. Let stand for twenty-four hours before bottling.

Adult dose one teaspoonful.

Tar and Wild Cherry.

Sugar house syrup..... 6 gallons.
Syrup of wild cherry.... 1 gallon.
Pine tar ..... 1 ounce.
Carb. magnesia..... 2 ounces.
Laudanum ..... ½ gallon.
Tartar emetic .....480 grains.
Muriate of ammonia.... 8 ounces.
Oil of bitter almonds....160 minims.
Alcohol, 188 per cent.... ½ gallon.
Vinegar of squills..... 32 ounces.
Caramel ..... 10 ounces.
Water, q. s. to make.... 10 gallons.

Rub the pine tar with carb. magnesia in mortar, add one quart of boiling water, agitate well and let stand for twelve hours; filter and add to syrup, then add laudanum, caramel and vinegar of squills, separately; dissolve the oil of bitter almond in the alcohol and mix with the syrups. Dissolve the muriate of ammonia and tartar emetic in the remainder of the water and strain.

Adult dose one teaspoonful.

White Pine Expectorant.

First make tinct. white pine and balm of Gilead.

Liquor potassa ..... 2 ounces.
Oil of turpentine ..... 2 ounces.
Liquid styrax ..... 2 ounces.
Balsam tolu ..... 2 ounces.
Carb. magnesia ..... 6 ounces.
Alcohol, 188 per cent..... 9 ounces.
Boiling water ..... 1 quart.

Mix the liquor potassa and oil of turpentine with the liquid styrax; dissolve the balsam tolu in the alcohol by the aid of a water bath. Place the carbonate of magnesia in a mortar and pour on the styrax, turpentine and liquor potassa, rub the solution thoroughly with the carbonate of magnesia, add the tolu dissolved in the alcohol. After rubbing to a smooth consistency, gradually add to the mixture the boiling water, stirring them well together, set aside for twelve hours, then filter; adding through the filter sufficient water to make the product measure a quart.

White Pine Expectorant.

Tinct. white pine and balm of gilead..... 2 pints.
Rock candy syrup.... 7 gallons.
Syrup of wild cherry.. 1 gallon.
Chloroform ..... 5¼ fl. ounces.
Acetate of morphia...320 grains.
Tincture of bloodroot.. 10 ounces.
Oil of sassafras..... 30 minims.
Oil of bitter almonds.. 60 minims.
Oil of cloves..... 60 minims.
Alcohol, 188 per cent. 1 gallon.
Tartar emetic .....320 grains.
Muriate of ammonia.. 8 ounces.
Caramel ..... 8 ounces.
Water, q. s. to measure 10 gallons.

Add the tinct. white pine, tinct. of bloodroot and caramel to the syrups and mix well, dissolve the oils and

chloroform in the alcohol and add. Dissolve the morphia, tartar emetic and muriate of ammonia in the remainder of the water, and mix thoroughly and strain.

Adult dose one teaspoonful.

Vegetable Cough Syrup.

Simple syrup	7	gallons.
Syrup of squills	¼	gallon.
Wine of ipecac	16	ounces.
Wine of antimony	16	ounces.
Tinct. of bloodroot	10	ounces.
Alcohol, 188 per cent	1	gallon.
Oil bitter almonds	60	minims.
Sulphate of morphia	320	grains.
Sweet spirits of nitre	16	ounces.
Caramel	4	ounces.
Water, q. s. to make	10	gallons.

Mix the syrups, wines and tincture of bloodroot together. Mix the oil of bitter almonds and sweet spirits of nitre with the alcohol and add. Dissolve the sulphate of morphia and caramel in the water and mix all thoroughly—strain.

Balsam of Aniseed.

Oil of aniseed	30 minims.
Oil of cinnamon	10 minims.
Oil of coriander	5 minims.
Paregoric	1 ounce.
Tinct. benzoni co	1 ounce.
Syrup of squills	4 ounces.
Wine of antimony	1 ounce.
Alcohol	1 ounce.
Simple syrup to measure	16 ounces.

Dissolve the oils in the alcohol and add the tinct. benzoni co. and paregoric; add the wine of antimony to the syrups and mix well with the other ingredients.

Adult dose one teaspoonful.

Bronchitis Mixture.

Chloral hydrate	128 grains.
Ammon. carb	128 grains.
Tinct. digitalis	128 minims.
Syrup of orange	4 ounces.
Water, q. s. to measure	16 ounces.

Dose: A tablespoonful every four hours.

Codeine Cough Syrup.

Codeine	16 grains.
Powd. ammonium chloride	1 ounce.
Ipecac wine	10 drams.
Spirit of nitrous ether	10 drams.
Syrup of squill	10 drams.
Syrup of wild cherry to	16 ounces.

Dissolve the codeine in about two drams of water with the aid of a small quantity of dilute hydrochloric acid; then dissolve the ammonium chloride in the syrup of wild cherry, and add the other ingredients, finally the codeine solution, and mix well.

Dose: A teaspoonful every three or four hours.

Pectoral Elixir.

Pulv. glycyrrhiz	½	ounce.
Pulv. acaciae	½	ounce.
Tinct. camph. co	2	ounces.
Vin. antimon	1	ounce.
Spt. aether. nitros	2	ounces.
Aquae	4	ounces.
Ext. pruni virg	1	ounce.
Elixir. aromatic. ad	16	ounces.

Rub the liquorice and acacia with the water, add the other ingredients gradually, and strain through absorbent cotton.

Dose: A teaspoonful.

Cough Balsam.

Ammon. mur	128 grains.
Chlorodyne	128 drops.
Syr. ipecac	1 ounce.
Syr. squills	1 ounce.
Tinct. opium camph	1 ounce.
Syr. wild cherry	1 ounce.

Cherry and Hoarhound.

Syr. marrubii	1	ounce.
Vin. ipecac	2	drams.
Spt. aether. nit.	2	drams.
Oxy. scillae	4	drams.
Tr. pruni virg.	1½	drams.
Tr. lobel	2	drams.
Ext. glycyrrhiz. liq.	4	drams.
Molasses (thinned with water) ad.	6	ounces.

Dose: One to two teaspoonfuls.

Cherry Cough Cure.

Syrup squills	20	ounces.
Syrup of wild cherry	20	ounces.
Acetate of morphia	20	grains.
Wine of antimony	3	ounces.
Paregoric	3	ounces.
Sweet spirits of nitre	2	ounces.

M. S. A.

Adult dose, one teaspoonful.

Influenza Syrup.

Spirits of chloroform	1	ounce.
Tinct. of aconite	1	dram.
Paregoric	1	ounce.
Spirits of nitrous ether	½	ounce.
Liq. ammon. acet. fort.	1½	ounces.
Bicarb. potassa	½	ounce.
Water	4	ounces.
Syrup of orange, enough to measure	16	ounces.

Adult dose, one tablespoonful three times a day.

Cough Remedy without Opium.

Bromide of potassium	1	ounce.
Tincture of sanguinaria (bloodroot)	3	fl. drams.
Tincture of hyoscyamus	2	fl. ounces.
Ether (sulphuric)	½	fl. ounce.
Syrup of ipecac	2	fl. ounces.
Syrup of tolu	7	fl. ounces.
Alcohol	1	fl. ounce.
Water	3	fl. ounces.

Dissolve the bromide of potassium in the water and mix the solution with the syrups. Mix the alcohol with the ether and tinctures, then add the mixture to the syrups and mix.

Dose, the same as other cough remedies, but may be given freely without injury.

North of England Cough Syrup.

Bromide ammon.	320	grains.
Paregoric	2½	ounces.
Fl. ext. licorice	1	ounce.
Tinct. digitalis	3	drams.
Syrup squills	2	ounces.
Simple syrup	4	ounces.
Water, q. s. to measure.	16	ounces.

Adult dose, one to two teaspoonfuls.

COUGH MIXTURES FOR CHILDREN.

The following formulas are found in the Hospital Formulary, of the Department of Public Charities and Correction of New York City. They are the prescriptions of good physicians, and may be used without hesitation in the doses named.

Cough Mixture for Infants.

R. Tinct. opii camph.

Spts. am. arom. aa	fl. 1	ounce.
Ext. ipecac fl.	fl. ½	dram.
Syr. pruni virgin.	fl. 1	ounce.
Aquae q. s. ad	fl. 3	ounces.

Mix. Dose: A teaspoonful.

Mistura Ammonii Carbonatis.

(Dr. Bosley.)

R. Ammonii carbonat .. ½ dram.
Syr. senegae ..... fl. 4 drams.
Syr. ipecac ..... fl. 2 drams.
Syr. tolut..... fl. 4 drams.
Ext. glycyrrhizae .. ½ dram.
Aquae cinnamon...
.....q. s. ad fl. 4 ounces.

Mix. Dose: A teaspoonful for children.

Mistura Ammonii Chloridi.

(Dr. Bosley.)

R. Ammonii chloridi... ½ dram.
Potassii chlorat.... 40 grains.
Syr. senegae..... fl. 4 drams.
Syr. ipecac ..... fl. 3 drams.
Syr. tolu ..... fl. 5 drams.
Ext. glycyrrhizae.. 1 dram.
Aquae cinnamomi..
.....q. s. ad fl. 4 ounces.

Mix. Dose: A teaspoonful for children.

Cough Mixture for Children.

(Without opium.)

Vin. ipecac ..... 2 drams.
Oxymel scillae ..... 6 drams.
Tr. belladon ..... 1 dram.
Spt. aether. nit..... 1½ drams.
Aq. camph. ad..... 6 ounces.

Dose: Under one year, one teaspoonful; under four years, two teaspoonfuls; under eight years, three teaspoonfuls; under fourteen years, one tablespoonful—every three or four hours in each instance.

Palatable Cough Mixture.

The following is good for general use:

Sodii benzoat..... ½ dram.
Tr. chlorof. et morphinae. 1½ drams.
Vin. ipecacuanhae..... 2½ drams.
Syrupi limonis ..... 1 ounce.
Aq. ad..... 6 ounces.
M.

A dessertspoonful for a dose.

The following is an efficient remedy for the distressing cough which follows a recent cold:

Vin. ipecac ..... ½ ounce.
Tr. camph. co..... ½ ounce.
Spt. chloroformi..... 2 drams.
Syrup. scillae ad..... 2 ounces.
M.

Dose: A teaspoonful every four hours.

For children above four years the prescription should be modified as follows:

Vin. ipecac ..... 2 drams.
Tr. camph. co..... 2 drams.
Spt. chloroformi..... 1 dram.
Syrup. tolutan..... ½ ounce.
Syrupi ad..... 2 ounces.
M.

Dose: A half to a whole teaspoonful every three or four hours.

The mixture can in each case be given to stop a severe paroxysm of coughing. The dose is followed in a few minutes by a most grateful feeling of warmth in the chest. If there is much secretion the ipecacuanha should be omitted and ammonium bromide be given instead.

Pleasant Cough Syrup. (Ch. & Dr.)

Oxymel of squills..... 6 ounces.
Wine of ipecac..... 1 ounce.
Fl. ext. licorice..... 2 ounces.
Essence of peppermint..... 1 ounce.
Water q. s. to make up to..16 ounces.

Adult dose: One or two teaspoonfuls three times a day.

Compound Lobelia Mixture.

(Edinburg Infirmary.)

Iodide potassium ..... 2 drams.
Carbonate ammonium ..... 1 dram.
Ethereal tincture lobelia... 4 drams.
Spirit chloroform ..... 4 drams.
Ipecacuanha wine ..... 1 dram.
Infusion senega up to..... 6 ounces.

Dissolve and mix.

A tablespoonful in a wine-glassful of water every four hours.

Useful in bronchitic asthma.

Inhalant for Cough of Consumptives.

Joseph Adolphus (Amer. Med. Jour.) recommends the following as a good inhalation that will allay cough, procure rest and often lower temperature in pulmonary consumption, chronic bronchitis, etc.:

Oil of turpentine..... 2 fl. ounces.
Oil of eucalyptus ..... 4 fl. drams.
Iodoform ..... 1½ fl. drams.
Creosote ..... 3 fl. drams.
Ether ..... 1 fl. ounce.

Direct the patient to put ten or twelve drops on a piece of fine sponge and drop in a wide-mouthed tin vessel containing a little boiling water; cover his head with a cloth large enough to enclose the vessel and inhale the fumes. The effect is often magical.

Cubeb Cough Syrup.

Tinct. cubebs ..... 2 ounces.
Tinct. tolu soluble ..... 1 ounce.
Tinct. opium co..... 1 ounce.
Tartar emetic ..... 8 grains.
Peppermint water ..... 2 ounces.
Simple syrup q. s. to measure .....16 ounces.

Dose: One teaspoonful.

COUGH DROP FORMULAS.

The following, appearing in the Confectioners' Union, have been found satisfactory:

Montpelier Cough Drops.

Brown sugar .....10 pounds.
Tartaric acid ..... 2 ounces.
Cream of tartar..... ½ ounce.
Water ..... 1½ quarts.
Anise seed flavoring..... q. s.

Melt the sugar in the water, and when at a sharp boil add the cream of tartar. Cover the pan for five minutes. Remove the lid and let the sugar boil up to crack degree. Turn out the batch on an oiled slab, and when cool enough to handle mold in the acid and flavoring. Pass it through the acid drop rollers, and when the drops are chipped up, and before sifting, rub some icing with them.

Medicated Cough Drops.

Light brown sugar.....14 pounds.
Tartaric acid ..... 1½ ounces.
Cream of tartar..... ½ ounce.
Water ..... 2 quarts.
Anise seed, cayenne, clove and peppermint flavorings .....
A few drops of each.

Proceed as before prescribed, but when sufficiently cool, pass the batch through the acid tablet rollers and dust with sugar.

Hoarhound Candy.

Dutch crushed sugar.....10 pounds.
Dried hoarhound leaves.. 2 ounces.
Cream of tartar ..... ¾ ounce.
Water ..... 2 quarts.
Anise seed flavoring..... q. s.

Pour the water on the leaves and let it gently simmer till reduced to

three pints; then strain the infusion through muslin, and add the liquid to the sugar. Put the pan containing the syrup on the fire, and when at a sharp boil add the cream of tartar. Put the lid on the pan for five minutes; then remove it, and let the sugar boil to stiff boil degree. Take the pan off the fire and rub portions of the sugar against the side until it produces a creamy appearance; then add the flavoring. Stir all well, and pour into square tin frames, previously well oiled.

Bronchitis. (Potter.)

Antimony and potassium tartrate	2	grains.
Solution acetate ammonium	4	ounces.
Spirit nitrous ether	1	ounce.
Tincture aconite	½	dram.
Syrup, enough to make	6	ounces.

A teaspoonful every two or three hours.

Bronchitis.

Solution acetate ammonium	4	drams.
Spirit nitrous ether		
Syrup ipecac.....of each	1½	drams.
Syrup senega	1	dram.
Syrup lemon	1	ounce.

A teaspoonful every three hours for children.

Pills for Chronic Bronchitis.

Ammonii chloridi	15 grains.
Ammon. carb	15 grains.
Pulv. ipecac	3 grains.
Morph. hydrochloratis	1 grain.
Glycer. tragacanth	q. s.
Pulv. glycyrrhiz	q. s.

Mass, and divide into ten pills. One to be taken night and morning.—Medical Press.

Dick's Asthma Cure.

Tinct. valerian	12	ounces.
Iodide of potash	½	ounce.
Water	1	ounce.
Tinct. hyosciamus	6	drams.
Tinct. tolu	6	drams.
Tinct. opium co	1	dram.
Simple syrup	1	ounce.

Mix.

Dose: One tablespoonful three times a day half an hour after meals.

Asthma Syrup.

Hydrate of chloral	64 grains.
Iodide of potash	64 grains.
Syrup of orange	2 ounces.
Distilled water	14 ounces.

Dose: One tablespoonful three to four times a day.

Asthma Mixture. (Potter.)

Fluid extract grindelia	½	ounce.
Fluid extract lobelia	2	drams.
Fluid extract belladonna	1	dram.
Potassium iodide	3	drams.
Glycerin	3	ounces.

A dessertspoonful as required.

Asthma Mixture.

Tinct. lobelia	40	minims.
Tinct. squills	96	minims.
Iodide of potash	32	grains.
Glycerine	½	ounce.
Camphor water q. s. to make up to	8	ounces.

Dose: One tablespoonful three to four times a day.

Asthma Inhalant.

Asthma.—The most popular remedies for this disorder are those used by inhalation, and experience demonstrates them the most effective. The following formula has no superior:

Grindelia ..... 8 drams.
Jaborandi ..... 8 drams.
Eucalyptus ..... 4 drams.
Digitalis ..... 4 drams.
Cubebs ..... 4 drams.
Stramonium .....16 drams.
Nitrate of potash.....12 drams.
Cascarilla bark .....1 dram.

The ingredients should be in fine powder, and thoroughly dry before mixing. The composition is used by burning from one-fourth to one-half teaspoonful, and inhaling the smoke. The nitrate of potash is dissolved in water, and the powder moistened with it and dried.

Asthma Cigarettes.

Tobacco .....90 drams.
Extract of stramonium..... 5 drams.
Iodide of potassium..... 5 drams.
Nitrate of potassium..... 5 drams.
Alcohol .....45 drams.

Mix dry, and make a hundred cigarettes.

Asthma Powder. A

Lobelia herb ..... 1 ounce.
Black tea ..... 1 ounce.
Stramonium ..... 1 ounce.
Potassium nitrate ..... 1 ounce.
Powdered anise ..... 1 dram.
Powdered fennel ..... 1 dram.

Mix.

Asthma Powder. B

Grindelia ..... 8 drams.
Jaborandi ..... 8 drams.
Eucalyptus ..... 4 drams.
Digitalis ..... 4 drams.
Cubebs ..... 4 drams.
Stramonium .....16 drams.
Potassium nitrate .....12 drams.
Cascarilla bark ..... 1 dram.

Mix.

Asthma Powder. C

Pulv. stramonii ..... 1 ounce.
Pulv. pot. nitrat..... ½ ounce.
Pulv. lobeliae..... ½ ounce.
Pulv. sem. anisi..... 2 drams.

M.

The ingredients should be in fine powder, and thoroughly dry before mixing. The composition is used by burning one-fourth to one-half teaspoonful and inhaling the smoke, which is most conveniently done by using the cover of a tin box.

CATARRH CURES.

Catarrh Cure. (For use with Atomizer.)

Sulph. carbolate of zinc...480 grains.
Sulphate of hydrastia.....480 grains.
Sulphate of zinc.....240 grains.
Sulphate of morphia.....120 grains.
Antisepticina ..... 32 ounces.
Distilled ext. of witch hazel 1 gallon.
Distilled water ..... 1 gallon.

Filter; use the solution warmed; spray with an atomizer four times a day and for internal use take Catarrh Cure, Formula following.

Catarrh Cure. (For internal use.)

Iodide of potash.....384 grains.
Syrup of orange ..... 2 ounces.
Tincture of cardamon co. 2 drams.
Tincture of quassia..... 2 drams.
Dilute alcohol ..... 3½ ounces.
Water to make..... 16 ounces.

Dose: One to two teaspoonfuls three times a day in a little water. While taking this mixture internally, the Catarrh Mixture for atomizer or douche should also be used.

Bergoline Oil Spray.

Acid camphoric ..... 8 grains.
Menthol .....20 grains.
Oil eucalyptol ..... 3 drams.

Dissolve the first two in the eucalyptol.

Bergoline, albolene, glymol or any other inodorous liquid petrolatum enough to make.. 4 fl. ounces.

Directions: Spray the throat and nose with the above, using an atomizer for oil.

Catarrh Cure. (For use with Douche.)

Carbolic acid crystals..... 1 ounce.
Glycerine ..... 1 pint.
Fl. ext. stramonium..... 2 pints.
Antisepticina ..... 2 pints.
Rose water, q. s. to make... 2 gallons.

Filter.

Use the solution warmed; spray with an atomizer three to four times a day.

Catarrh Snuff.

Bismuth subnitrate .....10 grains.
Orris root, powdered..... 3 grains.
Thymol, powdered ..... 1 grain.
Sugar of milk .....20 grains.
Gum arabic, powdered.....10 grains.
Soda bicarb..... 2 grains.
Quinine sulphate .....10 grains.

M.

Sniff up the nostrils several times a day.

Cream Anodyne for Catarrh.

Bismuth carbonate .....15 grains.
Thymol ..... 2 grains.
Cocaine ..... 2 grains.
Quinine sulphate ..... 5 grains.
Bergoline or albolene oil... 2 drams.
White vaseline ..... 6 drams.

Mix.

Cream Balsam for Catarrh.

Bismuth carbonate .....30 grains.
Iodide of potash.....10 grains.
Morphine sulphate ..... 2 grains.
Water q. s. or..... 1 dram.
Benzoic acid.....10 grains.
Lanoline q. s. to make..... 1 ounce.

Dissolve the iodide of potash and the morphine in the water and mix thoroughly with the other ingredients.

Fluid Lightning for Inhalation.

Essential oil of mustard.30 minims.
Chloroform ..... 4 drams.
Tincture of iodine..... 2 drams.
Carbolic acid crystals.... 2 drams.
Spirits ammon. arom..... 4 drams.
Glycerine q. s. to make. 4 fl. ounces.

Dissolve the oil of mustard in the chloroform. Mix the tincture of iodine with one ounce of the glycerine and add the spirits ammonia aromatic.

Dissolve the carbolic acid in another ounce of glycerine, and mix altogether.

Directions: Saturate pieces of sponge with the mixture and place in two ounce wide-mouth vials, and inhale. Keep well stoppered.

Label Fluid Electricity for Catarrh, Nervous Headache, Colds in the Head, etc.

INDIGESTION REMEDY.

For Indigestion, accompanied by Vomiting.

Acid, carbolic ..... 4 drops.
Subnitrate of bismuth....150 grains.
Powdered pepsin..... 60 grains.
Powdered acacia q. s.....
Tinct. ginger ..... 3 drams.
Simple syrup ..... 2 drams.
Cinnamon water q. s. to make ..... 2 ounces.

Dose: One teaspoonful three times a day; put a shake well label on the bottle.

RHEUMATISM, GOUT, ETC.

Thomas' Rheumatic and Gout Cure. A

Potash bicarb..... 5 ounces.
Potash iodide ..... 2½ ounces.
Soda salicylate..... 2½ ounces.
Wine of colchicum ..... 3¾ ounces.
Infusion of buchu q. s. to make ..... 1 gallon.

Dose: One tablespoonful four times a day.

Rheumatic and Gout Cure. B

Potash iodide ..... 3 drams.
Fl. ext. hemlock..... 3 drams.
Fl. ext. senna..... 8 drams.
Tinct. colch. root..... 3 drams.
Tinct. guiac. am..... 4 drams.
Syrup of sarsaparilla co. q. s. to make up to.....16 ounces.

Salicylic Acid Compound.

Salicylic acid .....640 grains.
Iodide of potash.....320 grains.
Potash bicarb..... ½ ounce.
Fl. ext. buchu..... 2 ounces.
Fl. ext. gelsemium..... 2 drams.
Fl. ext. cimcifuga..... 4 drams.
Fl. ext. pareira brava... 2 drams.
Alcohol ..... 2 ounces.
Glycerine ..... 2 ounces.
Syrup of sarsaparilla q. s. to make up to..... 16 fl. ounces.

Rheumatic Mixture.

Quinine sulphate .....30 grains.
Potassium iodide ..... 2 drams.
Colchicum wine ..... 1 ounce.
Tincture orange ..... ½ ounce.
Chloroform water to..... 8 ounces.

Rub the quinine with the wine, adding a few drops of dilute sulphuric acid to assist solution; then add the tincture, water, and finally the iodide of potassium.

London Rheumatic Liniment.

Turpentine ..... 1 gallon.
Nitrate potash ..... 4 ounces.
Sulphuric acid ..... 2 ounces.

Make the above in a stone crock and in the open air. Put the nitrate of potash in the turpentine and slowly add the sulphuric acid. Stir well and let stand 24 hours before bottling.

NEURALGIC REMEDIES.

Neuralgia Mixture.

Tinct. gelsem. sempervirens ..... 1½ drams.
Tr. quininae ..... 1 ounce.
Tr. quininae ammoniat... 1 ounce.
M.

Dose: One teaspoonful in water every second hour until relieved; then a dose twice or thrice daily, between meals, for a few days.

For Neuralgia.

Quinine valerianatis .....10 grains.
Tinct. sumbuli ..... 2 drams.
Extracti taraxaci liq..... 6 drams.
Infus. cascarillae ad..... 6 ounces.
M.

Sig.: A dessertspoonful three times a day.

Neuralgia Mixture.

Ammon. bromide ..... 1½ drams.
Tinct. gelsemii..... 2 drams.
Tinct. gentian co..... 2 drams.
Aquae chloroformi q. s. to measure ..... 6 ounces.

Dose: One tablespoonful.

The above mixture gives immense satisfaction.

Neuralgia Mixture.

Quinine sulphate .....12 grains.
Potassium bromide ..... 2 drams.
Dilute sulphuric acid.....20 minims.
Tincture gelsemium.....90 minims.
Spirit chloroform ..... 2 drams.
Distilled water, up to..... 6 ounces.

A tablespoonful every four hours as long as the pain continues.

Neuralgia Powder. (Ch. & Dr.)

Neuralgia powder ("not more than three to be taken in one day"):

Acetanilidi ..... 7 grains.
Pulv. rhei..... 1 grain.
Soda bicarb..... 2 grains.
M.

Neuralgia Powders.

Antifebrin ..... 5 grains.
Ferri redacti..... 5 grains.
M. Ft. pulv.
Ter die sd.

Neuralgia and Toothache Powders.

Acetanilid ..... 5 grains.
Lupulin ..... 5 grains.
Powdered sugar..... 5 grains.
Make a powder.

Three powders to be taken at intervals of four hours.

Headache Powder.

Acetanilid ..... 5 grains.
Sodium salicylate . ..... 5 grains.
Caffeine ..... 1 grain.
For two powders.

FOR NERVOUSNESS.

Nervinola.

Coca, ground .....16 ounces.
Damiana, ground .....16 ounces.
Orange peel, ground..... 8 ounces.
Quassia, ground ..... ½ dram
Bromide of potash..... 4 ounces.
Alcohol, 188 per cent....32 ounces.
Glycerine .....16 ounces.
Water .....64 ounces.
Sherry or port wine q. s.
to measure ..... 1 gallon.

Macerate and percolate the drugs with 32 ounces of alcohol and 32 ounces of water mixed—afterwards run through the other 32 ounces of water; in this dissolve the bromide of potash; mix with the glycerine and add to the percolate and enough wine to make up to 1 gallon.

Nervo-Valeria.

Valerianate of ammonium.256 grains.
Aromatic spts. of ammonia.640 minims.
Fl. ext. valerian ..... 1 ounce.
Simple elixir red q. s. to
make ..... 1 pint.
Dose: One to two teaspoonfuls.

Nerve Pills.

Phosphorus ..... 1-50 grain.
Valerianate zinc ..... ½ grain.
Ext. nux vomica..... ¼ grain.
Quinine ..... ½ grain.
Iron by hydrogen..... 1 grain.
To make one pill.

Female Tonic for Nervousness.

Black haw, ground.....30 ounces.
Red clover, ground.....30 ounces.
Yarrow, ground .....30 ounces.
Coca, ground .....10 ounces.
Eucalyptus, ground .....10 ounces.
Jaborandi ..... 2 ounces.
Ergot ..... 5 ounces.
Cologne spirits, 188 p. c... 2 gallons.
Distilled water ..... 4 gallons.
Simple syrup ..... 1 gallon.

Macerate for seven days—percolate and add the syrup.

HEADACHE REMEDIES.

Migraine Powders.

Caffeine .....30 grains.
Phenacetine .....30 grains.
Soda bicarb.....15 grains.

Fill into 20 capsules, or cachets.

Dose: Two every three hours until relieved.

Headache Capsules.

Caffeine ..... 240 grains.
Phenacetin .....7,000 grains.
Soda bicarb.....1,750 grains.
Willow charcoal ..... 480 grains.

Fill into No. 2 capsules.

Headache Powders.

Acetanilid .....30 grains.
Caffeine ..... 5 grains.
Bicarb. soda .....30 grains.

q. s. for ten powders, or cachets.

Headache Powders.

Acetanilid .....30 grains.
Salicylate of soda.....20 grains.
Bicarb. of soda.....10 grains.
Caffeine ..... 5 grains.

q. s. for ten powders, or cachets.

Headache Powders.

Phenacetine .....30 grains.
Salicine .....30 grains.
Rhubarb powdered ..... 5 grains.
Caffeine ..... 5 grains.

q. s. for ten powders, or cachets.

Digestive Pastilles of Borivent.

Bismuth subnitrate ..... 20 parts.
Calcium phosphate ..... 30 parts.
Sodium bicarbonate ..... 10 parts.
Magnesium carbonate ..... 200 parts.
Iron carbonate ..... 50 parts.
Sugar .....1,000 parts.

Flavor with essence of peppermint, anise, or orange flowers. Make into pastilles of 1 gram each, of which 3 to 12 may be taken daily.

For Chronic Headache.

Arseniate of sodium..... ½ grain.
Sulphate of atropine..... ½ grain.
Extract of aconite..... 7½ grains.
Powdered cinnamon ..... q. s.

Mix and make into thirty pills.

Sig.: From one to four pills daily.

Compound Bismuth Mixture for Indigestion.

Liq. bismuthi..... 6 drams.
Potassae bicarb..... 1½ drams.
Tr. nucis vom..... 2 drams.
Tr. chlorof. co..... 2 drams.
Tr. calumba..... ½ ounce.
Aq. ad..... 6 ounces.

Take one-half ounce at 11, 4 and 8.

Creasote Gargle.

Creasote .....10 minims.
Spirit of chloroform..... 1 dram.
Glycerine ..... ½ ounce.
Water to ..... 8 ounces.

Dissolve the creasote in the spirit, and add with brisk shaking to the glycerine and water previously mixed.

If a stronger gargle (5 minims or 10 minims to 1 ounce) is required, the creasote should be mixed with fresh milk (10 minims to 1 dram) and then diluted with water. The emulsion formed is perfect.

Wine of Creasote.

Creasote (Beech-wood)..96 minims.
Alcohol ..... 1 fl. ounce.
Oil cinnamon .....24 drops.
Oil cloves .....12 drops.
Oil anise .....12 drops.
Syrup orange peel..... 4 fl. ounces.

Sherry wine ..... 8 fl. ounces.
Simple elixir, enough to
make .....16 fl. ounces.

Dissolve the creasote and oils in the alcohol, add the wine, syrup and elixir, and filter through purified talcum.

Emulsion of Creasote.

Creasote (Beech-wood) 768 minims.
Powdered acacia ....1,080 grains.
Water, enough to
make ..... 32 fl. ounces.

Triturate the creasote with the acacia in a dry mortar, and add, all at once, 27 fluid drams of water; stir briskly with the pestle until the nucleus of the emulsion is formed, and add enough water to make 2 pints; finally strain through a cloth.

Perhaps the most admirable combination is:

Creasoted Emulsion of Cod-Liver Oil with Hypophosphites.

Cod-liver oil ..... 32 fl. ounces.
Creasote (Beech-wood) 6½ fl. drams.
Powdered acacia ..... 8 ounces.
Glycerin ..... 4 fl. ounces.
Syrup orange-peel.... 2 fl. ounces.
Cal. hypophosphite...555 grains.
Sod. hypophosphite...555 grains.
Oil wintergreen..... 2 fl. drams.
Oil sassafras ..... 2 fl. drams.
Oil cinnamon ..... 2 fl. drams.
Distilled water, enough
to make ..... 4 pints.

Mix the cod-liver oil, creasote, and essential oils, with the acacia, in a dry mortar; dissolve the hypophosphites in 12 fluid ounces of warm water, pour the solution, all at once, into the mixture of oils, creasote and acacia, and stir briskly in one direction with the pestle until emulsification takes place; then add the glycerine, syrup, and enough water to make 4 pints, and strain through a cloth. Recently-distilled water should preferably be used in these emulsions; but if none is at hand, water that has been freshly boiled and filtered will serve the purpose. In cold weather the water should be slightly warmed, else the emulsion will be very slow in forming. The creasote in the latter emulsion temporarily obtunds the sense of taste to a considerable degree while the preparation is being swallowed, and helps to conceal, in a measure, the unpleasant taste of cod-liver oil.

AGUE PREPARATIONS.

Agueine.

Port wine ..... ¼ gallon.
Proof spirits ..... 3¼ gallons.
Simple syrup ..... ¼ gallon.
Water ..... 1¼ gallons.
Alcohol ..... ¼ gallon.
Tinct. capsicum.....10 ounces.
Tinct. ginger .....10 ounces.
Aromatic sulphuric acid.20 ounces.
Quinine sulphate .....10 ounces.
Fl. ext. mandrake ..... 8 ounces.
Citrate of iron and am...15 ounces.

Baby Quinine. A

Tannin .....30 grains.
Quinine sulph.....80 grains.
Soda bicarb..... 2 drams.
Peppermint water ..... 2 ounces.
Simple syrup ..... 6 ounces.

Dose: One teaspoonful. Shake well, label.

Baby Quinine Tasteless. B

Cinchonia alkaloid pow'd.. 80 grains.
Sugar of milk .....400 grains.
Soda bicarb.....100 grains.
Cinnamon water ..... 2 ounces.
Simple syrup ..... 6 ounces.

Rub the cinchonia alkaloid, sugar of milk and soda bicarb. together in a

mortar, with a portion of the syrup, until smooth—add the other ingredients and mix well.

Dose: One teaspoonful.

Shake well, label.

Tasteless Chill Tonic.

Quinine sulphate	64 grains.
Cinchonine sulphate	64 grains.
Soda bicarb	120 grains.
Saccharin	15 grains.
Oil of wintergreen	30 minims.
Fowler's solution	256 minims.
Alcohol	2 ounces.
Water	3 ounces.
Cascara arom. q. s. to make up to	16 fl. ounces.

Dissolve the cinchona salts and oil of wintergreen in the alcohol, using a gentle heat of water bath. Dissolve the saccharin and soda bicarb. in the water.

Mix the solution of cinchona salts with the cascara arom., and then add the solution of saccharin and soda; lastly add the Fowler's solution and mix well.

Dose: One to two teaspoonfuls.

Tasteless Chill Powders.

Cinchonia alkaloid	25 grains.
Phenacetine	25 grains.
Sugar of milk	10 grains.
Soda bicarb	5 grains.

Mix. Make into ten powders.

Dose: For an adult two powders, follow with a glassful of lemonade half an hour after taking the powders.

Acetanilid or antipyrin may be substituted for phenacetine in the above.

KIDNEY AND LIVER MEDICINES.

Brown's Buchu and Acetate of Potash.

Buchu leaves, ground	50 pounds.
Juniper berries, ground	50 pounds.
Oil of wintergreen	1 pound.
Proof spirits	q. s.
Caustic potash	1 pound.
Alcohol	1 gallon.
Acetic acid	10 gallons.
Potash bicarb	q. s.
Water	9 gallons.
Sugar house syrup	10 gallons.

Percolate buchu and juniper berries with proof spirits until 30 gallons are obtained. Then run through the percolator the caustic potash dissolved in the 9 gallons of water.

Dissolve the oil of wintergreen in the alcohol and add the sugar house syrup, then neutralize the 10 gallons of acetic acid with potash bicarb. q. s. and mix with the other ingredients; color with caramel, q. s.

Diuretic Elixir of Buchu Co.

Buchu leaves, ground	10 pounds.
Juniper berries, ground	10 pounds.
Powdered cubebs	½ pound.
Oil of peppermint	½ ounce.
Sugar house syrup	5 gallons.
Water	q. s.
Proof spirits	q. s.
Liquor potassa	2 pounds.
Caramel	3 pints.

Mix the oil well with the drugs and macerate with a portion of the proof spirits for seven days, then percolate with proof spirits until the product obtained is 14 gallons; dissolve the liquor potassa in 2 gallons of water and run through the percolator. Add the syrup and caramel and enough water to measure 24 gallons.

Liver Invigorator. A

Fl. ext. colombo root.... 1 gallon.
Fl. ext. dandelion..... 1 gallon.
Fl. ext. virginia snake root ..... 1 gallon.
Fl. ext. senna ..... 5 gallons.
Fl. ext. mandrake..... 2 gallons.
Proof spirits .....10 gallons.
Tinct. coriander seed (one pound to the gallon)... 5 gallons.
Simple syrup ..... 5 gallons.
Caramel ..... ½ gallon.
Water .....11½ gallons.
Mix.

Liver Invigorator. B

Powdered senna ..... 2 pounds.
Powdered mandrake..... ½ pound.
Powdered rhubarb..... ½ pound.
Powdered jalap ..... ½ pound.
Powdered cloves ..... ⅛ pound.
Oil of peppermint..... ½ ounce.

Mix well, macerate and percolate with 2 gallons of alcohol and one gallon of water; run water through the percolator until the product measures 4 gallons; to this add 1 gallon of simple syrup.

Dose: One to two tablespoonfuls.

Kidney and Liver Cure.

Fl. ext. uva ursi..... 1 pound.
Fl. ext. buchu..... 1 pound.
Fl. ext. pareira brava.... 1 pound.
Fl. ext. dandelion..... 1 pound.
Nitrate of potash..... ½ pound.
Oil of wintergreen ..... ½ ounce.
Alcohol ..... 2 gallons.
Simple syrup ..... 6 pints.
Caramel ..... 6 ounces.
Water ..... 5 gallons.
Mix.

Dose: One to two tablespoonfuls.

Hamburg Breast Tea.

Marshmallow root, cut.... 4 ounces.
Licorice root, cut..... 1½ ounces.
Orris root, cut..... ½ ounce.
Coltsfoot leaves bruised.. 2 ounces.
Mullein flowers bruised.. 1 ounce.
White poppy capsules, bruised ..... ½ ounce.
Star anise seed, bruised.. 1 ounce.
Mix.

St. Germain Laxative Tea.

Senna leaves, cut.....16 ounces.
Elder flowers, bruised.....10 ounces.
Fennel seed, bruised..... 5 ounces.
Anise seed, bruised..... 5 ounces.
Cream of tartar..... 4 ounces.
Cut licorice..... 4 ounces.

Moisten the senna with a small quantity of water; then sprinkle over it as evenly as possible the cream of tartar; dry thoroughly with a gentle heat; add the other drugs and mix well.

Blood and Kidney Tea.

Senna leaves, bruised.....16 ounces.
Uva ursi, bruised..... 2 ounces.
Buchu, bruised ..... 2 ounces.
Sassafras bark, cut.....10 ounces.
Cut licorice root.....10 ounces.
Fennel seed, bruised..... 5 ounces.
Anise seed, bruised ..... 5 ounces.
Coriander seed, bruised.... 1 ounce.
Culver's root, cut..... 1 ounce.
Couch's grass ..... 1 ounce.
Mix well.
Pack in cartons.

Directions: One teaspoonful to a cup of boiling water, draw for 15 minutes. Sugar may be added if desired. Use twice daily.

German Herb Tea.

Senna, cut .....17 grammes.
Triticum, cut .....17 grammes.
Fennel seed, bruised..... 3 grammes.
Elder flowers ..... 3 grammes.

LAXATIVES AND APERIENTS

Syrup of Figs.

Senna, ground	48	ounces.
Licorice root, ground	4	ounces.
Cloves, powdered	½	ounce.
Jalap	2	ounces.
Granulated sugar	2	pounds.
Rochelle salts	1	pound.
Magnesia sulphate	½	pound.
Oil coriander	30	drops.
Oil peppermint	15	drops.
Oil cassia	60	drops.
Glycerine	4	pints.
Alcohol	4	ounces.
Salicylic acid	2	drams.
Saccharine	1	dram.
Hot water	q. s.	

Macerate the senna, licorice, Jalap and cloves with three gallons of hot water for two hours, keeping well covered. Press out by the aid of a tincture press and evaporate down to 1¼ gallons. Dissolve in this the sugar and salts and add the glycerine.

Dissolve the oils, saccharine and salicylic acid in the alcohol, and add.

Castroilina.

Senna, ground	48	ounces.
Wormseed, ground	4	ounces.
Licorice root, ground	4	ounces.
Wintergreen leaves, ground	4	ounces.
Fennel seed, ground	4	ounces.
Anise seed, ground	4	ounces.
Rochelle salts	24	ounces.
Glycerine	4	pints.
Oil of wintergreen	½	ounce.
Oil of peppermint	15	drops.
Salicylic acid	2	drams.
Alcohol	4	ounces.
Sugar, granulated	2	pounds.
Hot water	q. s.	

Macerate the senna, licorice root, wintergreen leaves, fennel, wormseed and anise with three gallons of hot water for two hours, keeping well covered. Press out by the aid of a tincture press and evaporate down to 1¼ gallons. Dissolve in this the sugar and salts and add the glycerine. Dissolve the oil of wintergreen and salicylic acid in the alcohol and add to the other ingredients.

Purgative Tablets.

Jalap, powdered	1	ounce.
Senna, powdered	1	ounce.
Ginger, powdered	1	dram.
Sugar, powdered	1	ounce.
Salicylic acid	½	dram.
Tamarind pulp., q. s. to make mass.		

Cover with chocolate for laxative fruit pastilles. For compressed tablets, replace the tamarind pulp by mucilage of tragacanth, q. s.

Effervescent Purgative Salts.

Epsom salts, half dried	1	ounce.
Soda bicarb	90	grains.
Tartaric acid	80	grains.
Saccharin	3	grains.
Oil of lemon	2	minims.
Essence of cloves (1 to 10)	5	minims.

Mix thoroughly.

Dose: Two heaped up teaspoonfuls in three-fourths of a tumblerful of cold water.

Harrogate Salts.

Pulv. potass. sulph. c. sulph.	1½	ounces.
Pulv. potass. bitart	5	ounces.
Mag. sulph. dry	40	ounces.

Put up in 2 ounce packets (first wrapper stearin or parchment paper) and label "The contents of the packet

to be put in a winebottleful of water, and a wineglassful of the solution taken every morning."

Fruit Saline. A

Tartaric acid .....13 ounces.
Soda bicarb.....14 ounces.
Sugar, powdered .....40 ounces.

Dry the ingredients separately, then mix well together and sift through fine sieve twice. Preserve in well corked bottles.

Fruit Saline. B

Soda bicarb.....16 ounces.
Acid tartaric .....14 ounces.
Magnesia sulph. dried..... 2 ounces.
Chlorate of potash..... 2 drams.
Powdered sugar .....16 ounces.

Dry the ingredients separately. Mix well together and sift through fine sieve twice. Preserve in well corked bottles.

Fruit Saline. C

Soda bicarb..... 2 ounces.
Acid, tartaric ..... 1½ ounces.
Cream of tartar..... 1½ ounces.
Sulphate of soda, dried... 1 ounce.
Powdered sugar ..... 6 ounces.

Carefully dry before mixing and preserve in a well corked dry bottle.

Fruit Saline. D

Rochelle salts ..... 1 ounce.
Cream of tartar ..... ½ ounce.
Tartaric acid ..... 1 ounce.
Soda bicarb..... 1 ounce.
White sugar ..... 2 ounces.

Carefully dry before mixing and preserve in a well corked dry bottle.

Sulpho Saline with Iron.

Sulphate of soda, dried... 1 ounce.
Soda bicarb..... 2 ounces.
Acid, tartaric ..... 1¾ ounces.
Rochelle salts ..... ½ ounce.
Sulphate of iron, dried...30 grains.
Powdered sugar ..... 4 ounces.
Saccharin .....10 grains.

Dry the ingredients separately before mixing; sift and mix well.

Preserve in well corked bottles.

EFFERVESCENT POWDERS.

Magnesian Lemonade Powders.

Fine white sugar..... 2 pounds.
Magnesium carbonate .... 6 ounces.
Citric acid ..... 4 ounces.
Essence of lemon..... 2 drams.

Rub the essence into the dry ingredients, work well together, sift and bottle.

Magnesian Orgeat Powders.

Fine sugar ..... 1 pound.
Carbonate of magnesia.... 3 ounces.
Citric acid ..... 1 ounce.
Oil of bitter almonds..... 3 drops.
Vanilla flavoring ..... q. s.

Thoroughly amalgamate the dry ingredients. Rub in the oil of almonds and sufficient essence of vanilla to give a slight flavor. Work all well together, sift and bottle.

Raspberryade Powder.

Fine sugar ..... 2 pounds.
Carbonate of soda..... 2 ounces.
Tartaric acid ..... 2 ounces.
Essence of raspberry..... 4 drams.
Carmine coloring ..... q. s.

Rub the essence well into the sugar, and mix this with the soda and acid. Then work in sufficient liquid carmine to make the powder pale red, sift through a fine sieve, and pack in air tight bottles.

Ambrosia Powder.

Fine sugar ..... 2 pounds.
Carbonate of soda.....12 drams.
Citric acid .....10 drams.
Essence of almonds.....20 drops.

Amalgamate the whole of the above, and afterwards sift and bottle in the usual manner.

Noyeau Powder.

Fine sugar ..... 2 pounds.
Carbonate of soda.....12 drams.
Tartaric acid .....10 drams.
Essence of noyeau..... 6 drops.

After the dry ingredients have been mixed and the essence rubbed into them, sift and bottle the powder.

Lemon Sherbet (Best).

Fine sugar ..... 9 pounds.
Tartaric acid .....40 ounces.
Carbonate of soda.....36 ounces.
Oil of lemon ..... 2 drams.

Having thoroughly mixed the dry ingredients, add the lemon, rubbing it well in between the hands; then sift the whole thrice through a fine sieve, and cork down tight.

As oil of lemon is used in this recipe the blending must be perfect or when the powder is put in water the oil of lemon will float.

Any other flavoring may be substituted for lemon, and the sherbet named accordingly.

Cream Soda Powder.

Fine sugar .....30 parts.
Tartaric acid ..... 7 parts.
Carbonate of soda..... 6 parts.
Finely powd. gum arabic..... 1 part.
Vanilla flavoring ..... q. s.

Proceed exactly as for best lemon sherbet.

Compound Mixture Taraxacum.

(Rocky Mountain Drug.)

Extract taraxacum ...	8	tr. ounces.
Nitrohydrochloric acid, dilute	4	fl. ounces.
Elixir bismuth	8	fl. ounces.
Syrup ginger	5⅜	fl. ounces.
Tincture nux vomica..	260	minims.
Spirits peppermint ...	15	minims.
Water, enough to make	32	fl. ounces.

Aperient Lozenge. (Ch. & Dr.)

Sulphur ..... 5 grains.
Cream tartar ..... 1 grain.
Extract ipecacuanha ..... 1-100.
Capsicine ..... 1-1000.
Calcium bisulphate ..... ⅛ grain.
Sugar ..... 8 grains.

Make one lozenge.

This combination is a gentle, efficient aperient remedy for habitual constipation. One, two or three lozenges to be slowly dissolved in the mouth soon after meals will be sufficient to produce a gentle and pleasant action. The patient, after the lozenge has dissolved, should drink a glass of water to increase the effect.

LINIMENTS.

Arnica Liniment.

Gum camphor	2	ounces.
Laudanum	8	ounces.
Chloroform	2	ounces.
Tinct. arnica flowers.....	1	gallon.

M. S. A.

German Oil Liniment.

Gum camphor	2½	ounces.
Chloroform	4	ounces.
Sulphuric ether	4	ounces.
Chloral hydrate	1	ounce.

Oil origanum ..... 6 ounces.
Oil sassafras ..... 3 ounces.
Turpentine .....192 ounces.
Alkanet root q. s. to color red.
M. S. A.

Magic Arnica Liniment.

Refined petroleum ..... 1 pint.
Oil origanum ..... 1 ounce.
Oil terebinth ..... 2 ounces.
Oil cedar ..... 1 ounce.
Oil spruce ..... 1 ounce.
Spirits camphor ..... 1½ ounces.
Oil sassafras ..... 1 ounce.
Color light red with alkanet root.

Liniment of Iodide of Ammonia.

Iodine .....15 grains.
Alcohol ..... 8 ounces.
Camphor ..... 2 drams.
Oil lavender ..... 1 dram.
Oil rosemary ..... 1 dram.
Water of am. stronger..... 1 dram.
Mix.

Indian Liniment.

Tincture capsicum ..... 1 ounce.
Oil camphor ..... ½ ounce.
Oil origanum ..... ½ ounce.
Oil pennyroyal ..... ½ ounce.
Oil hemlock ..... ½ ounce.
Alcohol .....32 ounces.
Color with red sanders.

Liniment for Sprains.

Liquor plumbi acet ..... 2 ounces.
Ol. origanum ..... 1 ounce.
Acetum ..... 2 ounces.
Aqua .....30 ounces.
Make a lotion.

British Oil. A

Oil of spike ..... 1 pint.
Oil of juniper wood..... 1 ounce.
Oil of origanum..... ½ ounce.
Mix.

British Oil. B

Oil of turpentine..... 8 fl. ounces.
Oil of flaxseed..... 8 fl. ounces.
Oil of amber ..... 4 fl. ounces.
Oil of juniper..... 4 fl. drams.
Barbadoes petroleum .... 3 fl. ounces.
Seneca oil ..... 1 fl. ounce.
Mix.

British Oil. C

Oil of turpentine..... 8 fl. ounces.
Barbadoes petroleum .... 4 fl. ounces.
Oil rosemary ..... 4 fl. drams.
Mix.

White Oils Liniment. A

Camphor ..... 3 ounces.
Spirit of turpentine ..... 4 pints.
Soft soap ..... 1 pound.
Cottonseed oil ..... 2 pints.
Solution of ammonia..... 1 pint.

Dissolve the camphor in the turpentine, and to this add the cottonseed oil. Dissolve the soap in 6 pints of water, add the ammonia, and incorporate this mixture with the oils with the help of an emulsifier. Allow to stand for a day or two, agitating every day; then with water reduce the emulsion to the consistency desired.

White Oils Liniment. B

Egg 1
Acetic acid ..... 2 ounces.
Distilled water ..... 2 ounces.
Oil turpentine ..... 4 ounces.

Beat up the egg with the turpentine; then add the acetic acid and water.

Red Nose Liniment.

Corrosive sublimate ..... 4 grains.
Muriate of ammonia..... 8 grains.
Alum ..... 8 grains.
Alcohol ..... 4 ounces.
Rose water ..... 4 ounces.
M. S. A.

Liniment for Colic.

Which when warmed and rubbed over the surface of the abdomen very quickly allays the pains of flatulent colic.

Lin. saponis comp..... 2½ ounces.
Lin. camphorae co..... 2½ ounces.
Ol. terebinth. rect..... 2 ounces.
Sapo. hispan ..... 2 drams.
Ol. cajuput ..... 1 dram.
Ol. limon..... 1 dram.

Mix, and make a liniment, to be rubbed assiduously or applied warm over the surface of the abdomen.

Roberts' Ready Relief.

Alcohol ..... 1 gallon.
Cayenne pepper, powdered.. 8 ounces.
Ginger, powdered ..... 8 ounces.
Spirits of ammonia ..... 8 ounces.
Gum myrrh, powdered..... 1 ounce.
Red saunders .....½ ounce.

Macerate 7 days and filter.

Cream of Camphor Liniment.

Gum camphor ..... 1 ounce.
Spirits of turpentine..... 2 ounces.
Aqua ammonia ..... 2 ounces
Sweet oil ..... 2 ounces.

Dissolve the camphor in the turpentine; mix the ammonia and sweet oil, shaking well together.

Ringworm Liniment.

Aromatic sulph. acid..... 1 ounce.
Spirits of nitrous ether..... 1 ounce.
Creosote ..... 1 ounce.

Mix.

Apply once a day with a feather until well.

Stokes' Chest Liniment.

Morphiae acet..... 6 grains.
Chloroform puri..... 1 ounce.
Lin. saponis ad..... 3 ounces.

M. Ft. lin.

To be rubbed into the chest, back and front, every night.

Stokes' Rheumatic Liniment.

Ol. terebinthinae ..... 1½ ounces.
Acid, acetic ..... 1½ ounces.
Ovi vitelli ..... unus
Olei limonis ..... 1 scruple.
Aquae rosae ad..... 8 ounces.

M. Ft. lin.

To be rubbed into affected joints.

Cyclists' Universal Oil.

Camphorated oil ..... 1 ounce.
Sperm oil ..... 3 ounces.
Vaseline oil ..... 4 ounces.

Mix.

Arnica Opodeldoc.

Rad arnica ..... aa.
Rad aconite ..... 2 ounces.
Pulvis opii ..... 6 drams.
Alcohol .....15 ounces.
Aqua distil.....10 ounces.

Macerate seven days and strain with pressure; then add

White castile soap..... 3½ ounces.
Gum camphor ..... 3 ounces.
Oil lavand ..... 1 ounce.
Oil origanum ..... ½ ounce.
Strong ammonia water... 1¼ ounces.

Nerve and Bone Liniment. A

Turpentine oil ..... 1 gallon.
Linseed oil ..... 1 gallon.
Juniper wood oil..... ¾ gallon.
Engine oil, neutral..... 1 gallon.
Origanum oil ..... 8 ounces.
Amber oil ..... 8 ounces.

Mix.

Nerve and Bone Liniment. B

Turpentine oil ..... 2 gallons.
Linseed oil ..... 2 gallons.
Engine oil ..... 2 gallons.

Origanum oil ..... 8 ounces.
Camphor oil ..... 8 ounces.
Rosemary oil ..... 8 ounces.
Mix.

Liniment of Soap and Iod. Potash.

Castile soap, powdered... 1¼ ounces.
Rose geranium oil..... 5 drops.
Almond oil ..... 1¼ ounces.
Iodide of potash..... 4 drams.
Water ..... 1¾ ounces.
Rub the castile soap and oils together; dissolve the iodide of potash in the water and mix well.

Hydride of Amyl Liniment.

Castor oil ..... 1 ounce.
Cocaine hydrochlorate .... 20 grains.
Menthol ..... 60 grains.
Chloral hydrate ..... 60 grains.
Amyl hydride .....120 minims.
Alcohol, q. s. to make up to. 2 ounces.
Dissolve the cocaine, menthol, chloral hydrate and hydride of amyl in the alcohol, and mix with the castor oil.
Prescribed by Dr. Bennet.

OINTMENTS.

Itch Ointment.

White wax ..... 2½ pounds.
Petrolatum, yellow ..... 5 pounds.
Lac. sulphur ..... 1 pound.
Powd. white helebore..... ¼ pound.
Carbolic acid, crystals.... ⅛ pound.
Oil rosemary ..... ¼ ounce.

Ointments for the Itch.

(French Hospital.)

Chloride of lime ..... 1 dram.
Rectified spirit ..... 2 fl. drams.
Rub together, add of
Sweet oil ..... ½ fl. dram.
Soft soap ..... 2 ounces.
Oil of lemon..... ½ fl. dram.
Mix perfectly, and then further add of
Common salt ..... 1 ounce.
Sulphur ..... 1 ounce.
Cheap, very effective, and much less offensive than sulphur ointment.

(Le Gros.)

Iodide of potassium ..... ½ dram.
Lard ..... 1 ounce.
Mix. Cleanly, harmless and effective.

Kraemer's Pile Ointment.

Beef suet .....10 pounds.
Lard .....15 pounds.
Solid extract stramon.... 1 pound.
Tannic acid ..... 1 pound.
Calomel ..... 2½ pounds.
Oil rose geranium..... 2 ounces.
Salicylic acid ..... 1 ounce.
Melt the fats, and mix in the other ingredients, stirring constantly until cold; run through a paint mill to ensure thorough mixing.

Compound Pile Ointment. A

White wax ..... 1 pound.
White petrolatum ..... 2½ pounds.
Powdered opium ..... 1 ounce.
Powd. hydrastia sulph... 1 dram.
Powdered catechu ..... 1 ounce.
Melt the wax and petrolatum and add the other ingredients; stir well and mix thoroughly.

Compound Pile Ointment. B

Tannin ..... 2 drams.
Bismuth subnit..... 2½ ounces.
Aqueous extract opium... 2 drams.
Petrolatum, yellow .....12 ounces.

Arnica Salve.

Yellow rosin ..... 2 pounds.
Yellow petrolatum ..... 2 pounds.
Solid extract arnica..... 2 ounces.

Carbolic Ointment.

Lard .....12 pounds.
Beef suet .....12 pounds.
White wax ..... 2 pounds.
Gum camphor ..... 2 ounces.
Carbolic acid crystals.... 2½ pounds.
Calomel ..... 2½ pounds.

Melt the lard, suet, wax, and camphor together.

Melt the carbolic acid crystals and add; strain and stir well; when nearly cold add the calomel and mix thoroughly; when cold fill into containers. This is the best carbolic ointment on the market.

Boracic Acid Salve.

Boracic acid, powdered... 8 ounces.
Yellow rosin ..... 2 pounds.
Yellow petrolatum..... 2 pounds.
Fl. ext. witch hazel bark.. 2 ounces.
Solid ext. arnica ..... ½ ounce.
Glycerine ..... 1 pint.
Lanoline ..... 1 pound.

Melt the rosin and petrolatum together and strain.

Mix the witch hazel, boracic acid, extract arnica and glycerine together and heat in a water bath until dissolved. Then add the lanoline and mix thoroughly with the other ingredients.

Mercurial Ointment.

Mercury ..... 1 ounce.
Lanoline ..... 1 ounce.
Olive oil ..... ½ ounce.

Kill the mercury by triturating with a few drops of balsam of sulphur, work in the lanoline then the olive oil.

Glycerine Ointment.

Starch ..... 3 parts.
Glycerine .....10 parts.

The starch, finely pulverized, is digested for about an hour with the glycerine, at the heat of a water bath.

Ointment of Iodine.

Ointment of iodine.—Iodine is very soluble in vaseline, and it is supposed enters partially into combination with the hydrocarbon, giving rise to a considerable effervescence (probable hydrogen being displaced). Iodine dissolves slowly in vaseline if allowed to macerate in it or if rubbed up with it, but for ointment of iodine the following gives the best results:

Iodine .....20 grains.
Alcohol ..... q. s.
Vaseline ..... 1 ounce.

Dissolve the iodine in the alcohol, and mix with the vaseline placed on a hot water bath. Very little iodine will be evaporated during the operation.

Iodide of Iron Ointment.

Iodide of Iron Ointment.—If iron be added to a solution of iodine in vaseline and repeatedly shaken (the whole kept liquid on a water bath), the almost black color of the iodine disappears, and if an excess of iron be employed the color becomes green, and if it be then filtered the ointment will have a beautiful emerald green color through transmitted light and almost black by reflected light.

Iodine ..... 4 drams.
Iron filings .....12 drams.
Vaseline .....16 ounces.

This iodide of iron ointment is stable and almost without taste. Prepare from it a jelly by adding an equal quantity of very fine sugar, in which manner it could be easily taken by children. Mr. E. Fougera, of Brooklyn, has also prepared a bromide and chloride in like manner, and suggests its use in keeping the protosalts of iron by enveloping them in it.

Ointment for Barber's Itch.

Creolin ..... 1 dram.
Oleate of mercury..... 4 drams.
Oxide of zinc..... 4 drams.
Salicylic acid ..... 1 dram.
Yellow petrolatum ..... 1½ ounces.

Itch Salve.

Bismuth subnitrate ..... 2 drams.
Creolin ..... 3 drams.
Sulphur ..... 2 drams.
Yellow petrolatum ..... 1 ounce.

Oleate of Mercury.

Red oxide of mercury.... 1 ounce.
Oleic acid ..... 2¾ ounces.
White petrolatum ..... 1¼ ounces.

Add the oxide to the acid at a steam-bath temperature, and, after combination, add the vaseline.

Dilute with acid, oleic or paraffin, molle alb., according as an oleate or an ointment is ordered.

Iodide of Potassium Ointment.

Iodide of potassium.....64 grains.
Hyposulphite of sodium.... 1 grain.
Glycerine ..... 1 dram.
Benzoated lard ..... 1 ounce.
Water ..... 5 minims.

Triturate the iodide with the glycerine, add the benz. lard, and lastly the hyposulphite dissolved in the water, and mix thoroughly.

Witch Hazel Ointment.

Lanolin ..... 2 ounces.
Glycerin ..... 2 ounces.
Fl. ext. witch hazel bark... 2 ounces.
Boracic acid ..... 2 drams.
Yellow petrolatum .....10 ounces.

Dissolve the boracic acid in the glycerine by heat; add the witch hazel and lanoline; and then the petrolatum. Stir well.

Ointment for Blistering Horses.

Croton oil ..... 2 drams.
Euphorbium powd..... 1 ounce.
Cantharides powd..... 1 ounce.
Turpentine oil ..... 3 ounces.
Petrolatum, yellow ..... 3 ounces.
Mix.

Healing Ointment.

Petrolatum, white .....16 ounces.
Oxide of zinc..... 2 ounces.
Oleate of mercury..... 1 ounce.
Boracic acid ..... 2 drams.
Carbolic acid ..... 2 drams.

Ointment for Chapped Hands.

Menthol .....15 grains.
Salol. .....30 grains.
Ol. olivae ..... ½ dram.
Lanolini ..... 1½ ounces.
M.

Apply night and morning, rubbing in well.

Nit Ointment.

The safest preparation on the whole is one made from stavesacre, such as:
Ol. staphisag ..... 1 ounce.
Cerae flavae ..... 1 ounce.
Vaselini ..... 6 ounces.
Hyd. sulph. rub.....10 grains.
Ol. bergam.....10 minims.
Ol. cinnam..... 3 minims.
Ol. citronell ..... 2 minims.
Ft. ung.

Ointment for Boils. A

Heitzmann is authority for the following:
Salicylic acid ..... 2 drams.
Soap plaster ..... 2 ounces.
Lead plaster ..... 1 ounce.

Ointment for Boils. B

Ichthyol. ..... 1 dram.
Lead plaster ..... 2 drams.
Resin plaster ..... 1 dram.

Stick Salve.

Rosin ..... 1 pound.
Mutton tallow ..... 1 ounce.
Beeswax .....
Burgundy pitch, of each.. ½ ounce.
Balsam fir.....
Venice turpentine, of each ¼ ounce.
Oil spike .....
Oil hemlock .....
Oil cedar.....
Oil origanum .....
Oil wormwood .....
Laudanum .....
Pulverized camphor gum
of each ..... 1 dram.

Melt the rosin, tallow, beeswax and pitch together. When a little cool, add the oils, laudanum, etc.; stir in the pulverized camphor, and pour into cold water, then, by greasing the hands, it can be pulled and worked until it becomes intimately mixed, when it can be rolled into suitable sized sticks.

Eye Salve. A

White petrolatum ..... 1¼ pounds.
Purified beef suet ..... 1½ pounds.
White precipitate ..... ½ ounce.
Oil of sassafras..... 1 dram.

Eye Salve. B

Yellow oxide of mercury.. 96 grains.
Oxide of zinc .....60 grains.
Morphine sulphate .....30 grains.
White petrolatum .....16 ounces.

Steer's Opodeldoc.

White castile soap; cut small; 2 pounds; camphor, 5 ounces; oil of rosemary, 1 ounce; oil of origanum, 2 ounces; rectified spirit, 1 gallon; dissolve in a corked bottle by the heat of a water bath, and when quite cool, strain; then add ammonium hydroxide, aqua ammonia, 11 ounces; immediately put in bottles, cork close, and tie over with bladder. It will be very fine, solid, and transparent when cold. The liquid opodeldoc is prepared by taking 2 ounces castile soap shavings, and dissolving them in one quart alcohol, with gentle heat; then add 1 ounce camphor, ½ ounce oil rosemary, and 2 ounces spirits hartshorn (aqua ammonia).

Mayer's Ointment.

Prof. J. U. Lloyd, in 1890, contributed an article to the Era on the history of this preparation, for which he gave the following formula from the Eclectic Dispensatory of 1852, with these remarks:

Formula for Mayer's Ointment.—To olive oil, two pounds and a half, add white turpentine, half a pound; beeswax, unsalted butter, of each, four ounces; melt them together and heat to nearly the boiling point. Then add gradually red lead, one pound, and stir constantly until the mixture becomes black or brown; then remove from the fire, and when it has become somewhat cool, add to it a mixture of honey, twelve ounces, powdered camphor, half a pound.

Uses.—"This forms a superior salve, and is useful for all ulcers, cuts, wounds, etc. It has been kept a great secret for a length of time among the foreign population of our country, and is highly prized by those who have used it."

Remarks.—The mixture of olive oil, beeswax and greases (lard will answer instead of butter), should be heated over direct fire until they will effervesce, when a little red lead is added thereto. The vessel containing them should be iron and of four times the capacity of the batch. The red lead should be added cautiously, a table-

spoonful at a time for a fifty-pound batch and well stirred after each addition, the red color changing to brown quickly if the temperature is high enough. After the reaction is completed, and the mixture is cool enough to receive the honey without violent effervescence, it should be added and stirred well to evaporate the water. Lastly, when the mixture is cool enough to dissolve the camphor without vaporization, it must be added and dissolved. This point must be determined nicely to prevent the loss of camphor from evaporation, or roughness of the ointment by reason of undissolved particles of camphor.

Mayer's ointment has a dark brown color (not red), and is about the consistence of simple cerate. The prominent odor of camphor overcomes the peculiar odor of the other ingredients, and even the familiar rank odor of olive oil that has been heated in contact with litharge or red lead is scarcely perceptible. Mayer's ointment should be perfectly smooth and free from grit or roughness.

Screw Worm Ointment.

Laundry soap, yellow....60 pounds.
Yellow rosin ..... 5 pounds.
Crude carbolic acid..... 9½ gallons.

Shave the soap and break up the rosin into small pieces and dissolve by the aid of heat; add the acid. Pour into wide mouth bottles while warm.

Neuralgic Ointment.

Menthol .....45 grains.
Cocaine .....15 grains.
Chloral .....10 grains.
Vaseline ..... 5 drams.

To be applied to the painful part.

Simple Ointment. A

Ointment, simple.—Olive oil, 5½ fl. ounces; white wax, 2 ounces; melted together and stirred while cooling.

Simple Ointment. B

Prepared lard, 4 pounds; white wax, 1 pound; as the last.

Simple Ointment. C

White wax, 2; prepared lard, 3; almond oil, 8; melt together and stir until it becomes solid. The above are mild emollients, useful in healthy ulcers, excoriations, etc., but chiefly as forming the basis of other ointments.

Sulphur Ointment. A

Sublimed sulphur ..... 1 ounce.
Lard ..... 4 ounces.

Mix thoroughly, by trituration. These are the proportions of the new Br. and the E. and D. Ph. In the last London Ph. a larger quantity of sulphur is ordered.

Sulphur Ointment. B

The compound sulphur ointment of the London Ph. consists of—
Nitrate of potassa (in fine powder) .....40 grains.
White hellebore (in fine powder) .....10 drams (troy).
Sulphur ..... 4 ounces (troy).
Soft soap ..... 4 ounces (troy).
Lard ..... 1 pound (troy).

It is said to be more efficacious than the simple ointment; but is apt to irritate a delicate skin.

Ointment of White Wax. A

1. White wax (pure).... 2 ounces.
   Prepared lard ..... 3 ounces.
   Almond oil ..... 3 fl. ounces.

Melt them together, and stir the mixture until it solidifies. This is the unguentum simplex of the new British Pharmacopoeia.

Ointment of White Wax. B

2. White wax ..... 2 ounces.
Olive oil ..... 5½ fl. ounces.

As before. A mild emollient, in various applications, but chiefly as a basis for other ointments and medicated pommades. On the Continent it is regarded as more healing when made with yellow wax.

Spermaceti Ointment.

Spermaceti Ointment.—Simple ointment, emollient dressing, etc.

Spermaceti ..... 5 ounces.
White wax (pure)..... 2 ounces.
Almond oil ..... 1 pint.

Melt them together by a gentle heat, and stir constantly until the whole solidifies.

Ointment of Creasote.

Creasote ..... 1 fl. dram.
Spermaceti ointment ..... 1 ounce.

Triturate them together, in a slightly warmed mortar, until perfectly united, and subsequently until nearly cold.

Indian Cerate.

For burns, scalds, chapped hands, sore eyes, etc.

Zinci oxidi ..... 2 drams.
Cerae japonicae ..... 1½ ounces.
Adipis ..... 4 ounces.
M. S. A.

Pile Ointment. (Era.)

(For itching piles.)

Yellow oxide of mercury... 5 grains.
Petrolatum ..... 1 ounce.

Gallic acid .....20 grains.
Extract of opium .....10 grains.
Extract of belladonna.....10 grains.
Simple ointment ..... 1 ounce.

Apply night and morning.

Ointment of galls with opium .....20 grains.
Bismuth subnitrate ..... 1 dram.
Powdered opium .....10 grains.
Soft paraffin ..... 1 ounce.

Bleeding Piles.

Tannic acid ..... ½ dram.
Morphine acetate ..... 5 grains.
Liniment subacetate of lead ..... ½ fl. ounce.
Simple ointment ..... 7 drams.

Triturate the tannic acid with the liniment and then mix all together.

Pile Salve.

Tannic acid .....10 grains.
Bismuth subnitrate .....20 grains.
Carbolic acid .....10 minims.
Morphine sulphate ..... 8 grains.
Petrolatum, enough to make 1 ounce.

Apply locally night and morning.

Suppositories for Piles. A

Ext. ergot. (solid)..... 2 grains.
Ext. Opii ..... ¼ grains.
Ext. nuc. vom..... ¼ grains.
Cocain. hydrochlor..... ¼ grains.
Ol. theobrom..... q. s.
Ft. suppositoria.
Mitte 12.

(Rub down the extracts and cocaine on a warm slab, and gradually add the ol. theobrom., which should be only just melted, return to the suppository-bath, pouring into the mould as soon as liquefied, using the least possible heat.)

For Painful Piles and Vaginitis.

(Journ. Med. and Science.)

Ext. aconite	⅛ grain.
Ext. belladonna	⅛ grain.
Ext. hydrastis	1 grain.
Ext. lobelia	3 grains.
Cacao butter	enough.

Make one suppository.

Pile Suppositories. B

Iodoform	30 grains.
Extract belladonna	3 grains.
Morphine sulphate	1½ grains.
Cacao butter	180 grains.

Mix, and make twelve suppositories.

Pile Suppositories. C

Ext. witch hazel, powd.	60 grains.
Tannin	12 grains.
Opium	4 grains.
Cacao butter	180 grains.

Mix, and make twelve suppositories.

Kamnafuga.

Acetanilid	50 grammes.
Caffeine	2 grammes.
Tartaric acid	3 grammes.
Sodium bicarbonate	45 grammes.

Mix thoroughly.

Compound Acetanilid Powder.

Acetanilid	65 grains.
Soda bicarb	30 grains.
Caffeine	3 grains.
Tartaric acid	2 grains.

Anti Pain Powder.

Phenacetin	50 grains.
Caffeine	5 grains.
Sodium bicarb	43 grains.
Citric acid, powdered	2 grains.

Soothing Antiseptic Dressing for Contusions.

(Southern Practitioner.)

Cocaine hydrochlorate	30 grains.
Camphor	40 grains.
Carbolic acid	40 grains.
Resorcin	1 dram.
Zinc oxide	4 drams.
Lanolin	2 ounces.
Petrolatum	2 ounces.

Apply every three hours. Soothing, healing and antiseptic.

Antiseptic Mixture.

Alcohol	8 ounces.
Thymol	60 grains.
Menthol	10 grains.
Oil eucalyptus	60 drops.
Oil wintergreen	110 drops.
Glycerine	8 ounces.
Boric acid	5 drams.
Aqua dist	128 ounces.
Color q. s.	

Filter.

CARMINATIVES, ETC.

Diarrhoea Cordial.

Laudanum	8 ounces.
Fl. ext. catechu aqueous	32 ounces.
Spirits of camphor	8 ounces.
Essence of peppermint	5 ounces.
Tincture of ginger	10 ounces.
Tincture of cloves	10 ounces.
Tincture of cassia	10 ounces.
California port wine	96 ounces.
Proof spirits	256 ounces.
Simple syrup	128 ounces.
Water	96 ounces.
Caramel	4 ounces.

Squibb's Diarrhoea Mixture.

Tincture of opium	1 fl. ounce.
Tincture of capsicum	1 fl. ounce.
Spirit of camphor	1 fl. ounce.

Purified chloroform ....180 minims.
Alcohol, enough to
make ..... 5 fl. ounces.

Thielemann's Diarrhoea Mixture.

Wine of opium..... 1 fl. ounce.
Tincture of valerian.... 1½ fl. ounces.
Ether ..... ½ fl. ounce.
Oil of peppermint.....60 minims.
Fl. ext. of ipecac.....15 minims.
Alcohol, enough to
make ..... 4 fl. ounces.

This preparation is practically identical with the "Mixtura Thielemanni" of the Swedish Pharm.

Velpeau's Diarrhoea Mixture.

Tincture of opium, compound tincture of catechu (U. S. P.), spirit of camphor, each equal volumes.

Anti-Cholera Mixture.

Tr. rhei co..... 1½ ounces.
Tr. catechu..... ½ ounce.
Tr. zingib..... 2 drams.
Ext. glycyrrhiz. liq..... ½ ounce.
Aq. camphorae ad..... 8 ounces.
M.

For Diarrhoea in Children.

Paregoric .....17 minims.
Bismuth. subnit..... 2 drams.
Syr. limonis..... ½ ounce.
Mist. cretae..... 1½ ounces.
M.

Shake well, and give one teaspoonful every three or four hours to a child one year old.

Loomis' Diarrhoea Mixture.

Tincture of opium..... ½ fl. ounce.
Tincture of rhubarb.... ½ fl. ounce.
Co. tinct. catechu (U. S.
P.) ..... 1 fl. ounce.
Oil of sassafras.....20 minims.
Compound tincture of
lavender, enough to
make ..... 4 fl. ounces.

Carminative or Gripe Mixture for Infants.

Sodii bromidi ..... 1 scruple.
Sodii bicarb..... ½ dram.
Ol. pimentae ..... 1 minim.
Ol. carui ..... 4 minims.
Ol. anisi..... 2 minims.
Spt. rectificat..... ½ ounce.
Syrupi ..... 1 ounce.
Aq. ad..... 8 ounces.

Dissolve the oils in the spirit, and add to 6½ ounces of water containing 1 dram of French chalk. Shake well, and filter. In the filtrate dissolve the salts, and add the syrup.

Dose: One to two teaspoonfuls.

The cramps of cholera are treated by the celebrated Bartholow with the following combination:

Chloral hydrate ..... 3 drams.
Sulphate of morphine.. 1 grain.
Sulphate of atropine.... ¼ grain.
Chloroform water..... 4 fl. drams.
Distilled water ..... 4 fl. drams.

A dose is twenty minims repeated every ten minutes as required.

Diarrhoea Mixture.

Tincture capsicum .... ½ fl. ounce.
Spirit peppermint ..... 1 fl. ounce.
Tincture opium ..... 1½ fl. ounces.
Tincture catechu com-
pound ..... 2 fl. ounces.
Tincture kino..... 2 fl. ounces.
Tincture rhatany..... 2 fl. ounces.
Spirit camphor ..... 2 fl. ounces.
Water ..... 2 fl. ounces.

Mix. Dose, one teaspoonful.

Diarrhoea Mixture for Children and Adults.

Tr. catechu..... ½ ounce.
Bismuth. subsalicylat..... 3 drams.
Pulv. cretae aromat..... 3 drams.
Aq. chloroform ad..... 8 ounces.
M.

Dose: For an adult, half a wineglassful; from 14 to 18 years, a tablespoonful; from 10 to 14 years, a dessertspoonful, and less for younger children. Repeat twice at intervals of three hours.

Thielmann's Cholera Drops.

Oil of peppermint	1	fl. ounce.
Alcohol	8	fl. ounces.
Tinct. opium and saffron	3	fl. ounces.
Tincture ipecac	8	fl. ounces.
Tincture valerian	13½	fl. ounces.

Mix. Dose: One to two fluid drams.

New York "Sen" Cholera Mixture.

Tincture capsicum	1 part.
Tincture opium	1 part.
Tincture rhubarb	1 part.
Spirit peppermint	1 part.
Spirit camphor	1 part.

Mix. Dose: Fifteen to thirty drops in a wineglass of water.

Mist Gonorrhoea.

Powdered gum tragacanth	30 grains.
Spirits nitrous ether	3 drams.
Liquor potassa	3 drams.
Balsam copaiba	6 drams.
Tincture of cubebs	6 drams.
Oil of cinnamon	6 drops.
Syrup of orange	1 ounce.
Cinnamon, water q. s. to make up to	8 ounces.

Dose: One to two tablespoonsful two to three times a day.

Triturate the gum tragacanth in a mortar with the spirits of nitrous ether, in which the oil of cinnamon has been dissolved; add gradually four ounces of cinnamon water. Mix the liquor potassa with the balsam copaiba in a bottle; add the tincture of cubebs and syrup, then add contents of mortar. Make up the product to eight ounces with cinnamon water and shake well.

Copaiba Mixture.

Copaibae	½	ounce.
Liq. potassae	2	drams.
Aq. ad	3	ounces.

Shake well, and add to the following:

Tinct. cubebae	1	ounce.
Tinct. opii	½	dram.
Mucil. acaciae	½	ounce.
Aq. chloroformi ad	5	ounces.

M.

Dose: A tablespoonful thrice daily.

Liq. Copaibae Solubilis.

Oil of copaiba	½	ounce.
Balsam of copaiba	4	ounces.
Or resin of copaiba	2½	ounces.
Freshly slaked lime	1½	ounces.
Water to	30	ounces.
Carbonate of soda	2	ounces.
Rectified spirit	2	ounces.

Rub up the oil and balsam, or the resin, with the lime and 20 ounces of water, then transfer to a glass flask and boil gently for twenty minutes; then dissolve the soda in remainder of the water, and add to first solution. When cold, stand for a week, with occasional shaking; then add the spirit in which a few drops of pimento or cinnamon oil may be dissolved; shake well, and filter through wetted filter-paper.

Essence Copaiba, Cubebs and Buchu.

Tinct. cubebs	8 ounces.
Oil of copaiba	2 drams.
Fl. extract buchu	4 ounces.
Alcohol	8 ounces.

Mix.

Essence of Santal with Buchu and Cubebs.

Tincture of cubebs	8 ounces.
Fluid extract buchu	4 ounces.

Essence of santal..... 8 ounces.
1 to 15
Spirits of nitre..... 4 ounces.
Mix.

Solidified Copaiba.

Calcined magnesia ..... 2 ounces.
Rub well with water, 2 drams, until thoroughly mixed, then add:
Balsam copaiba..... 2 pounds.
Mix well together and expose in a suitable vessel, to heat of a water bath (212 degrees F.) for one-half to one hour, stirring frequently. Set aside to solidify. The proportions may be changed to accommodate the heavy balsam.

Cubeb Paste.

Copaiba balsam .....10 parts.
Yellow wax .....10 parts.
Mix by the aid of a gentle heat and add:
Powdered cubebs .....50 parts.
The mass can be divided into boluses of any suitable size.

Injection for Gleet.

Acetate zinc ..... 4 grains.
Extract belladonna ..... 4 grains.
Colorless hydrastis ..... 1 ounce.
Camphor water ..... 1 ounce.
Glycerine ..... ½ ounce.
Water, q. s. ad..... 4 ounces.

Red Wash Injection.

Acetate lead ..... 4 ounces.
Sulphate zinc ..... 8 ounces.
Sulphate hydrastia ..... 1 ounce.
Fld. ext. Spanish saffron.. 4 ounces.
Fld. ext. catechu aqueous. 8 ounces.
Fld. ext. opium aqueous.. 4 ounces.
Glycerine .....128 ounces.
Aquae dist.....500 ounces.

Gonorrhoea Injection.

Sulphate of hydrastia. ½ ounce.
Sulphate of zinc ....128 grains.
Acetate of lead .....320 grains.
Sulphate of morphia .. 30 grains.
Boracic acid ..... 1⅝ ounces.
Dissolved in
Glycerine ..... 16 fl. ounces.
Carbolic acid ..... 15 drops.
Water, distilled .....128 ounces.
Mix.

Emulsion of Sandalwood.

Santal wood oil ..... 2 ounces.
Cubebs oil ..... 2 ounces.
Copaiba oil .....20 ounces.
Wintergreen oil ..... 2 ounces.
Castor oil .....32 ounces.
Gum tragacanth powd..... 8 ounces.
Gum arabic, powd.....32 ounces.
Camphor water .....96 ounces.
Glycerine .....32 ounces.
Salicylic acid ..... 1 dram.
Chloride of sodium..... 1 ounce.

EYE WATERS.

Rose Eye Water.

Acetate of zinc.....480 grains.
Acetate of lead .....480 grains.
Acetate of morphia..... 30 grains.
Acetic acid dil..... 1 dram.
Rose water .....192 ounces.
Mix.

Alum Eye Water.

Alum ..... 8 grains.
Rose water ..... 8 ounces.
Drop night and morning into the eye with a pipette.

Witch Hazel Eye Water.

Distilled ext. of witch hazel. 2 ounces.
Rose water ..... 2 ounces.
Zinc sulphate ..... 4 grains.
Morphia sulphate ..... 1 grain.

The Care of the Eyes.

At the sanitary convention held at Ann Arbor, Mich., not long ago, Dr. C. J. Lundy, of Detroit, read a paper on "Hygiene in Relation to the Eye," which should have the widest circulation, especially among teachers and school officers. A fruitful source of eye troubles is shown to be the excessive strain upon the muscles and nerves of the eyes due to faulty educational methods, the ill-planned and insufficient lighting of school rooms, poor ink and fine print in school books, and other causes which education might correct. In conclusion, Dr. Lundy laid down the following rules for the better care of the eyes:

1. Avoid reading and study by poor light.

2. Light should come from the side, and not from the back or front.

3. Do not read or study while suffering great bodily fatigue or during recovery from illness.

4. Do not read while lying down.

5. Do not use the eyes too long at a time for near work, but give them occasional periods of rest.

6. Reading and study should be done systematically.

7. During study, avoid the stooping position, or whatever tends to produce congestion of the head and face.

8. Select well printed books.

9. Correct errors of refraction with proper glasses.

10. Avoid bad hygienic conditions and the use of alcohol and tobacco.

11. Take sufficient exercise in the open air.

12. Let the physical keep pace with the mental culture, for asthenopia is most usually observed in those who are lacking in physical development.

Another set of rules which gives additional information on the care of the eyes are drawn up to serve as a guide to students and others working by artificial light:

1. If the work be carried on at a table, the cover should be green.

2. If the light be given from a lamp or candle, it should be so covered with a shade as to prevent the glare from falling on the eye.

3. It will, in addition, be advantageous to have the candle or lamp covered with a globe or chimney of tinted glass; which may be green, blue or opaline.

4. If gas is used it may be brought down by means of an india-rubber pipe to a lamp placed on the table, which may be arranged as before recommended.

5. If this cannot well be done, the gas globes may be of tinted glass, and the person should wear a shade over the eyes, or should sit with his back to the light.

6. If there is any defect of vision, compensating glasses should be worn, and they may be made of tinted glass.

Reading by firelight is also injurious on account of the glare, the quickly repeated dilatations and contractions of the iris, due to the changes in the intensity of the light, and the frequent alteration of the accommodation of the eye which the latter necessitates. Persons as cooks, compelled to work before a strong fire, should, if they experience any ocular inconvenience from the practice, wear smoked glasses.

Chilblain Liniment. A

Lin. terebinth co	6 ounces.
Lin. saponis	6 ounces.
Tinct. opii	2 ounces.
Lin. camphoras	2 ounces.

M. S. A.

Chilblain Liniment. B

Chloroform	1	ounce.
Camphor	1	ounce.
Liq. ammon. fort	1	ounce.
Lin. opii	½	ounce.
Tr. lavand. co	½	ounce.
Glycerini	2	ounces.
Spt. rectificat. ad	10	ounces.

M. S. A.

To be gently rubbed on the unbroken skin night and morning.

Chilblain Liniment. C

Tinct. iodi	3	drams.
Tinct. cantharidis	1	ounce.
Spt. chloroformi	2	drams.
Spt. aetheris nitrosi	1½	drams.
Aquae ammoniae	2	drams.
Acid. boracici	20	grains.
Zinci acetatis	10	grains.
Plumbi acetatis	6	grains.
Sap. mollis	1	ounce.

M.

One application every night after bathing feet well.

Chilblain Liniments (Unbroken). D

Potassii iodidi	1½	ounces.
Sapo mollis, P. B	3	ounces.
Tr. cantharidis	1	ounce.
Glycerini	6	drams.
Aquae	6	ounces.

Dissolve separately in q. s. of water, and add ol. geranium to perfume and liq. cocci to color.

A Remedy for Chilblains.

Professor Boeck, of Christiana, suggests the following inelegant but most effectual remedy for children's chilblains:

Ichthyoli	1	dram.
Resorcini	1	dram.
Tannini	1	dram.
Aquae	5	drams.

M.

To be painted on each evening.

When thus applied, the fluid in a few minutes forms a varnish on the skin, and causes the chilblain and swelling to disappear. The objection to the remedy is that for a week or a fortnight the parts look black and dirty, and some persons cannot stand the application of resorcin to their skin.

Chilblain Liniment. E

Chloroform	½ fl.	ounce.
Belladonna liniment	½ fl.	ounce.
Water of am. strong	½ fl.	ounce.
Glycerine	1	ounce.
Soap liniment q. s. to make up to	6	ounces.

Mix.

Chilblain Ointment. A

Lanolin	1	ounce.
Vaselin	2	drams.
Ol. cajuput	2	drams.
Ac. boric	2	drams.
Ac. carbolic	20	grains.
Pulv. camphor	40	grains.

Ft. ung.

Chilblain Ointment. B

Resin flav	1	dram.
Cerae flav	1½	drams.
Ol. olivae	3	drams.
Vaselini	12	drams.
P. zinci oxidi	1½	drams.
Hyd. ox. rub	45	grains.
Ol. eucalypti	10	minims.

Mix. Ft. ung.

Apply daily to affected parts.

Chilblain Ointment. C

Adipis benzoat	4	ounces.
Ceresinae	1	ounce.
Ol. terebinth	1	ounce.
Camphor	2	drams.
Ol. rosmarinae	15	minims.

Melt the lard and wax, and add the rest of the ingredients, previously mixed together. Stir well.

To be rubbed on the parts affected night and morning.

Chilblain Ointment for Broken Chilblains.

Zinci oxidi ..... 1 dram.
Hydrarg. ox. flav..... 2 grains.
Lanolini ..... ½ ounce.
Vaselini ..... ½ ounce.
M.

Borosalicylat.

This is the name given to a compound made by bringing together two molecules (676 parts) of sodium salicylate and four molecules (124 parts) of boric acid. They are rubbed together, and the damp mass then dried. It is an antiseptic, and in the following combination is an excellent application for chilblains:

Borosalicylat ..... 5 drams.
Arnica glycerine ..... 1 ounce.
Lanoline or lard ..... 4½ drams.
Vaseline ..... 5½ drams.
Mix.

The arnica glycerine is made by macerating 1 ounce of arnica flowers in 9 ounces (by weight) of glycerine for eight days.

Chilblain Cream.

Ointment of nitrate of mercury ..... 1 ounce.
Camphor, powdered ..... 1 dram.
Oil of turpentine ..... 2 drams.
Olive oil ..... 5 drams.

Mix, with a gentle heat, in a wedgewood ware mortar and triturate until cold.

Ointments for Chilblains. A

Made mustard, (best, very thick). ..... 2 drams.
Glycerine ..... 1 dram.
Spermaceti cerate..... 1½ drams.

Mix in a slightly warmed mortar, and triturate until cold. For unbroken chilblains, to be applied night and morning.

Ointments for Chilblains. B

Gall nuts, (in very fine powder). ..... 1 dram.
Spermaceti cerate..... 7 drams.
Glycerine ..... 2 drams.

Mix, and rub the whole to a uniform mass. An excellent application to obstinate broken chilblains, particularly when used as a dressing.

Corn Cure. A

Collodion ..... 16 ounces.
Salicylic acid .....960 grains.
Ext. cannabis indicus.... 90 grains.
Sulphuric ether ..... 2 fl. ounces.
Alcohol ..... 4 fl. ounces.
M. S. A.

Corn Cure. B

Collodion ..... 4 ounces.
Salicylic acid .....240 grains.
Cocaine ..... 40 grains.
M. S. A. Color with chlorophyll.

Corn Solvent.

Solution of potassa..... 1 dram.
Tincture of iodine ..... 1 dram.
Glycerine ..... 4 drams.
Water, enough to complete. 1 ounce.

Application for Soft Corns.

Acid. salicylic .....30 grains.
Sapo. moll ..... 1 ounce.
M. Ft. ungt.

Apply a small piece on lint each morning.

Corn Salve.

Lard ..... 2½ pounds.
Beef suet ..... 3¾ pounds.
Wax ..... 1¼ pounds.
Salicylic acid .....15 ounces.
Mix.

Corn and Wart Eradicator.

Gum sandarach picked... 7 drams.
Gum mastic ..... 1 dram.
Acid salicylic .....80 grains.
Ext. cannabis indicus....40 grains.
Iodine resublimed ..... 6 grains.
Sulphuric ether ..... 2 fl. ounces.

Dissolve the gums in the ether; strain and add the salicylic acid, iodine and extract of cannabis indicus —shaking well until dissolved.

Directions: Paint a little on the corn or wart with a camel's hair brush, allow it to dry on, repeat the application three times, let it remain on a week, when the corn or wart may be removed by the finger nails or blunt instrument. It is advisable to soak the feet before using.

Dusting Powder for Sweating Feet. A

(Kaposi.)

Sodium salicylate..... 1 dram.
Potassium permanganate... 2 drams.
Bismuth subnitrate ..... 3 ounces.
Talcum, enough to make... 6 ounces.

Dust freely on feet and into stockings and shoes every morning. Wash feet before retiring, dry well and apply some of the powder.

Foot Powder. B

Salicylic acid ..... 1 dram.
Boric acid ..... 2 drams.
French chalk ..... 6 drams.

Mix and perfume with a drop of an essential oil.

Foot Powder. C

Powdered orris ..... ½ ounce.
Powdered boric acid..... 1 ounce.
Powdered starch ..... 2 ounces.
Powdered Fuller's earth.. 2 ounces.
M.

Zinc Cream for Bromidrosis.

Zinc oxide ..... 1 ounce.
Starch powder ..... 4 drams.
Salicylic acid ..... 1 dram.
Glycerin ..... 4 drams.
Saturated solution boric acid in rose water..... 4 ounces.
Useful for painful sweaty feet.

For Acne. (Bernard Wolff.)

Mercuric chloride, (gr. 1 to). ..... 2 grains.
Resorcin, (gr. 30 to)..... 1 dram.
Cherry-laurel water ..... 2 fl. drams.
Wheat flour ..... 2 drams.
Lanolin, enough to make. 1 ounce.

For Acne of the Face.

(Bull. Gen. Therap.)

Ointment betanaphthol ... 15 grains.
Ointment storax ..... 15 grains.
Lard, benzoinated .....375 grains.

Application of this mixture should be made with strong friction every night for a week, then interrupted for six days, when it may be repeated if necessary, although it is often useless to do so. If there is an appearance of small acute clusters, which generally show themselves toward the second day, the acne is ordinarily cured or very much ameliorated at the end of a week.

Soothing Syrup Without Opium.

Simple syrup .....64 ounces.
Cologne spirits, 188 per cent. .....16 ounces.

Oil of anise ..... 1 dram.
Oil of caraway ..... ½ dram.
Bromide of potash ..... 2 ounces.
Water distilled ..... 8 ounces.

Dissolve the oils in the spirits. Dissolve the bromide of potash in the water and add all to the syrup.

Soothing Syrup With Morphine.

Oil of anise ..... 1 dram.
Oil of caraway..... ½ dram.
Cologne spirits, 188 per cent .....16 ounces.
Morphia sulphate .....40 grains.
Simple syrup q. s. to measure in all.....80 ounces.

Dose: 1 teaspoonful or less according to age; each teaspoonful contains 1-16 grain of morphine.

Soothing Syrup (Non-Poisonous).

Sodae bicarb..... ½ dram.
Sodae brom..... ½ dram.
Ol. anethi..... 8 minims.
Ol. anisi ..... 8 minims.
Spt. rectificat..... 3 drams.
Aq. chloroformi ..... 1½ ounces.
Syr. simplicis ad..... 8 ounces.

Dissolve the oils in the spirit and the soda salts in the water. Mix and filter through magnesia into the syrup. Color slightly with tr. croci.

Dose: Half to a whole teaspoonful alone, or in a little warm water.

Teething Powder.

Calomel .....13 drams, 1 scruple.
White sugar .....26 drams, 2 scruples.
Powdered opium ..... 2 scruples.

Dose: 3 to 6 grains. Each 6-grain powder contains 1-10 g. of opium.

C. contributed the following:

Calomel ..... ½ grain.
Pulv. antim. comp..... 2 grains.
P. ipecac. co..... 1 grain.

Dose: For a child under six months old half a powder, above that age a whole powder.

Children's Soothing Syrup (Without Poison).

Syr. hyoscyami ..... 2 ounces
Syr. anisi ..... 4 ounces
Potass. bromid.....20 grains.
Syrup. ad..... 1 pint.

M.

One teaspoonful for a child a year old.

Syr. Hyoscyami.

Ext. hyoscyami .....30 grains.
Aq. bullientis ..... 4 ounces.

Rub in mortar, filter, make up to 4 fl. ounces, and dissolve therein—

Saccharum ..... 8 ounces.

Syr. Anisi.

Ol. anisi ..... 4 minims.
Simple syrup, hot..... 5 ounces.

Shake well together.

Teething Powders.

Chlorate of potash, powdered ..... 6 grains.
Bicarbonate of soda ..... 6 grains.
Powdered antimony ..... 1 grain.
Powdered sugar ..... 6 grains.

Mix well, and make into 6 powders.

Dose: One to two powders according to age.

Cooling and Teething Powders.

Potass. chlorat..... 2 grains.
Pulv. glycyrrhiz..... 2 grains.
Pulv. sacch. alb..... 4 grains.

M.

The above represents the contents of one packet, and from a quarter to a half of a powder is sufficient for children between two and twelve months old.

Children's Soothing Powders.

Calomel ..... 60 grains.
Morphine ..... 4 grains.
Sugar of milk.....180 grains.
Mix well and sift twice.

Doses: 2 to 6 months, 2 grains; 6 to 9 months, 3 grains; 9 to 15 months, 4 grains; and ½ grain more for each additional three months.

Children's Soothing Powders (Without Poison).

P. potass. bromid..... 1 ounce.
P. ipecac..... 1 dram.
Sacch. lactis..... 1 ounce.
Mix.

Two grains for a child two years old.

Cooling Powder for Children.

Hydrarg. subchlor..... 2 drams.
Antim. tart..... 2½ grains.
Pulv. amyli ..... 4 drams.
M.

Doses: 6 months to 1 year, 2 grains; 1 to 2 years, 3 grains; 2 years and upwards, 4 grains.

Powder for Children when Relaxed.

Compound aromatic powder of chalk ..... 5 grains.
Salicylate of soda..... 1 grain.
Mix.

Whooping Cough Powders.

Powdered senega ..... 3 grains.
Lac sulphur .....12 grains.
Powdered licorice .....10 grains.
Powdered sugar .....16 grains.
Mix.

Make into 12 powders.

Baby Dusting Powder.

Boric acid ..... 2½ ounces.
Starch ..... 5 ounces.
French chalk ..... 3 pounds.
Oil of rose-geranium .... 2 drams.
Mix.

Oil Vermifuge. (Old Style.)

Olive oil .....32 ounces.
Castor oil .....10 ounces.
Oil of wormseed ..... 1 ounce.
Oil of peppermint ..... 1 dram.

Mix. Fill into 1 ounce long round vials; put two teaspoonfuls of fluid extract of pink root in each bottle before filling with the above.

Worm Syrup. A

Fl. ext. pink root and senna ..... 64 ounces.
Essence of peppermint ... 10 ounces.
Distilled water ..... 60 ounces.
Simple syrup .....250 ounces.
Alcohol, 188 per cent..... 32 ounces.
Oil of wormseed ..... 5 drams.

Dissolve the oil in the alcohol and add to the other ingredients; mix well.

Worm Syrup. B

Santonin ..... ½ dram.
Liq. potassae ..... 2 drams.
Aquae ..... 2 ounces.
Sacch. cryst..... 2 ounces.
Ol. anisi ..... 1 minim.
Spt. chloroformi ..... ½ dram.

Put the santonin in a flask and pour upon it the liq. potassae, then the water, and boil until dissolved (from five to ten minutes). Then add the sugar, dissolve, and strain. When cold add the oil dissolved in the spirit, and make up to 4 fluid ounces with simple syrup.

Worm Syrup. C

Santonin ..... 4 grains.
Liq. sennae dulc..... 1½ dram.
Glycerini ..... 1 dram.
Syr. anisi ad..... 1 ounce.

Rub the santonin to fine powder, and mix with the glycerine; then add the syrups.

Label: Shake the bottle. Worm-syrup for children. Under one year old, half teaspoonful; one year old, three-quarter teaspoonful; two years old, one teaspoonful; three years old, one and a half teaspoonful; four years old, two teaspoonfuls; six years old, two and a half teaspoonfuls; eight years old, three teaspoonfuls. To be given first thing in the morning, fasting.

Worm Syrup.

Fluid extract of spigelia.. 6 ounces.
Fluid extract of senna.. 3 ounces.
Oil anise ..... 10 minims.
Oil caraway ..... 10 minims.
Syrup ..... 8 ounces.

Dose: One or more teaspoonfuls at intervals until purging commences.

Remedy for Worms. (J. G. P.)

Santonin .....10 grains.
Calomel ..... 3 grains.
Resin jalap ..... 1 grain.

For 3 or 6 powders.

Worm Powders. (C. W. Moister.) A

Santonin .....10 grains.
Calomel .....15 grains.
Scammony, resin, powd.....15 grains.
Powdered sugar .....30 grains.

Mix, and divide into 15 powders. Give one three times daily (on an empty stomach) for one day and repeat in 3 days if necessary.

Worm Powders. B

Santonin .....10 grains.
Podophyllin ..... 4 grains.
Powdered rhubarb .....15 grains.
Sugar of milk .....30 grains.

Mix, and divide into 15 powders. Give powders 5 hours apart (on an empty stomach), until 3 have been given.

Omit a day, repeating the dose if necessary.

Tasteless Worm Powder.

Santonin ..... 1 ounce.
Pulv. sacch. alb..... 2 ounces.

M.

Doses: 2 to 5 years, 6 grains; 9 to 10 years, 9 grains.

Worm Lozenges (Plain).

Powdered santonine ..... 4 pounds.
Essence of peppermint..... q. s.
Confectioners' sugar ..... q. s. to
Make into 100 pounds of lozenges; 280 lozenges to the pound; each lozenge contains 1 grain of santonine.

If lozenges containing ½ grain of santonine are desired; have the amount of santonine put into 200 pounds of lozenges, 280 lozenges to the pound, color with carmine if a pink color is desired.

Worm Lozenges (Compound).

Powdered santonine .... 4 pounds.
Calomel ..... 2 pounds.
Podophyllin .....1,400 grains.
Carmine q. s. to color pink.

Make into 100 pounds of lozenges, 280 lozenges to the pound, each lozenge contains 1 grain of santonine, ½ grain of calomel and 1-20 grain of podophyllin.

Worm Cakes.

White sugar powdered..5,820 grains.
Powdered scammony .... 480 grains.
Powdered jalap ..... 480 grains.
Calomel ..... 960 grains.
Powdered acacia ..... 960 grains.
Powdered curcuma ..... 240 grains.

Powdered starch ..... 720 grains.
Oil of cinnamon..... 10 drops.
Water q. s. to make a mass cut into 960 cakes.

Tapeworm Emulsion.

Emulsion pumpkin seeds... 4 ounces.
Ethereal ext. male fern.. ½ ounce.

Make an emulsion.

Take half at bedtime after fasting 12 hours. In the morning take a bottle of eff. citrate of magnesia. If the worm is not expelled repeat the dose next evening.

Should any symptoms of vomiting be manifested apply a mustard plaster to the pit of the stomach.

Magic Toothache Drops.

Camphor ..... 8 ounces.
Chloral hydrate ..... 8 ounces.
Cocaine .....240 grains.
Alcohol ..... 8 ounces.

Mix.

Windsor Toothache Drops. A

Oil cloves ..... 2 ounces.
Oil peppermint ..... ½ ounce.
Creasote ..... 1 ounce.
Tinct. aconite ..... ½ ounce.
Chloroform ..... 2 ounces.
Alcohol ..... 2 ounces.

Mix.

Windsor Toothache Drops. B

Oil of cajeput ..... 4 ounces.
Oil of black pepper..... 6 drams.
Laudanum ..... 8 ounces.
Alcohol .....16 ounces.
Oil of cloves ..... 1¼ ounces.

Dissolve the oils in the alcohol and add the laudanum.

Toothache Balsam.

Tinct. benzoin co..... 2¼ ounces.
Chloroform ..... 6 fl. drams.
Cocaine hyd.....12 grains.
Oil peppermint .....12 drops.
Oil cloves .....12 drops.
Oil sassafras .....12 drops.
Acid. carbolic ..... 1 dram.

Dissolve the cocaine, oils and acid in the chloroform and add to the tincture of benzoin co.

Toothache Anodyne.

Cocaine hyd.....12 grains.
Sulphuric ether ..... 1 ounce.
Oil of peppermint..... 1 ounce.

Dissolve the cocaine in the ether and add the oil.

Toothache Paint.

Tincture of iodine..... ½ ounce.
Tincture of aconite..... ½ ounce.
Laudanum ..... ¼ ounce.
Carbolic acid ..... ½ dram.

Mix.

Paint the gums about the affected teeth every two hours (not oftener) until relieved.

Toothache Tincture. A

Tincture of opium..... 1 ounce.
Tincture of hyosciamus.... 1 ounce.
Tincture of chloroform and morphine ..... 1 ounce.

Toothache Gum.

Beeswax or hard paraffin wax ..... 2 ounces.
Lard ..... ½ ounce.
Oil of cloves..... 1 ounce.
Creasote ..... 1 ounce.
Powdered sugar ..... 1 dram.

Melt the beeswax and lard, when cool add the oil of cloves and the creasote; pick absorbent cotton into

lint; q. s. to saturate thoroughly with the above mixture and sprinkle with the sugar, then roll into pipes, wrap with waxed paper and place in vials.

Painless Tooth Extraction.

H. O. Collier, D. D. S., of Forney, Texas, explains in the Medical World that he uses the following local anesthetic for the painless extraction of teeth:

Cocaine hydrochloride	20	grains.
Chloral hydrate	10	grains.
Carbolic acid	5	grains.
Oil clove	5	minims.
Glycerin	4	fl. drams.
Water	4	fl. drams.

Toothache Tincture. B

Camphor	1	dram.
Sang. draconis	1	dram.
Mastic	1½	drams.
Ol. caryoph	1	dram.
Chloroformi	2	ounces.
Spt. rectificat	2	ounces.

Macerate several days, and filter.

After the toothache is relieved the customer should be recommended to insert a stopping of guttapercha.

Toothache Tincture. C

Sp. ammon. co	3	drams.
Ol. caryoph	3	drams.
Tannin	½	ounce.
Mastich	½	ounce.
Tr. opii	3	ounces.

For Toothache.

Menthol	1	dram.
Chloroform	1	dram.

Dissolve.

Dry out the tooth with absorbent cotton and insert in the hollow a piece of cotton upon which 5 drops of the solution have been placed.

Toothache Ball and Stopping.

Resin. flav	1 ounce, 6	drams.
Gum. juniper	1 ounce, 6	drams.
S. V. R	1	ounce.
Spt. aetheris	6	drams.
Acid. carbol	1	ounce.

For Toothache.

Tannin	40	grains.
Creasoti	15	drops.
Aether. sulph	1	ounce.

M.

Odontodol for Toothache.

Hydrochlorate of cocaine	15	grains.
Elder-flower water	15	minims.
Tincture of arnica	2½	drams.
Mindererus spirit	5	drams.

Mix.

Toothache Essence. A

Dr. L. Cyrus Allen states that the following seldom fails to give temporary relief:

Ol. caryophylli	15	minims.
Menthol	2	drams.
Chloroformi	1	dram.
Tr. aconiti	3	drams.
Spt. rectificat	1½	ounces.

M.

Directions: Cleanse out the cavity thoroughly (preferably by syringing) and apply on cotton. Also rub a little on gums.

Toothache Essence. B

Menthol	1	ounce.
Methylated chloroform	1	ounce.
Oil of cloves	½	ounce.
Spirits	4	ounces.

Dissolve the menthol in the spirit, add the chloroform and oil of cloves.

This may be rubbed into the face with the fingers, or a few drops may be placed on cotton wool and inserted in the tooth.

Roback's Toothache Cordial.

Oil peppermint .....15 drops.
Cocaine ..... 6 grains.
Chloroform ..... 1 ounce.
Alcohol ..... ¼ ounce.
M.

Beverage Preservative.

Acid. salicylic ..... 1 ounce.
Potass. carb..... 2 drams.
Aq. bullien .....25 ounces.
Glycerin .....10 ounces.

Dissolve the acid and potass. carb. in the water, and add the glycerine.

Hop-bitter beer as now sold is a fermented beer containing 2 per cent, or less, of proof spirit. To make it, dissolve 4 pounds of sugar in 10 gallons of hot water, and add the following mixture:

Tincture of lupuline (1 in 20 of S. V. R.)..... 2 ounces.
Oil of cassia ..... 6 minims.
Oil of citronella..... 3 minims.
Tincture of capsicum.....20 minims.

Dissolve, and add

Tincture of chiretta..... 1 ounce.
Conc. compound infusion of orange ..... ½ ounce.
Caramel to ..... 4 ounces.

When the temperature of the syrupy fluid is reduced to 80 degrees F., add ½ ounce of compressed yeast; ferment for twelve hours, skim off the yeast, strain through a felt bag, and bottle.

Ginger Wine.

Sugar ..... 4 pounds.
Water ..... 6 pints.

Dissolve by the aid of heat, strain, and add the following mixture:

Soluble essence of ginger.. 6 drams.
Tincture of orange..... 2 ounces.
Essence of raspberry.....15 drops.
Essence of peppermint..... 3 drops.

Curacao Liqueur.

Tincture of fresh orange-peel ..... 1 ounce.
Tincture of tangerine orange ..... 1 ounce.
Oil of orange ..... 2 drams.
Rectified spirit .....12 ounces.
Water .....10 ounces.
Syrup ..... 8 ounces.

Mix, and at the end of a few days filter.

Orange Wine.

Orange wine is made by boiling together 23 pounds of sugar and 10 gallons of water. Clarify with the whites of six eggs, and pour upon the peels of 100 Seville oranges. To the syrup add the juice of the oranges, and when the whole is sufficiently cool add 6 ounces of fresh yeast, and ferment for three or four days. Then strain into a barrel, allow to stand for a month, add half a gallon of brandy, and mature for at least three months longer.

Beef and Malt Wine.

Extract of beef ..... 4 ounces.
Extract of malt..... 8 ounces.
New port wine..... 1 gallon.

Rub down the extracts with sufficient wine to make a thin syrup, add to the bulk, shake, and set aside for a few weeks; then decant the clear portion and filter the sediment.

Raspberry Vinegar.

Red raspberries ..... ½ gallon.
Malt vinegar ..... ¼ gallon.
Water .....32 ounces.

Macerate 48 hours; press out the juice, and boil with sugar twelve ounces; skim and bottle.

Jersey Brandy.

Proof spirits ..... 1 gallon.
Sweet spirits of nitre..... 1 ounce.
Orris root crushed..... ½ ounce.
Prunes with pits broken.. 4 ounces.
Sherry wine .....16 ounces.

Macerate for two weeks and filter.

Hop Stout.

To a solution of brown sugar 1 pound and licorice-juice 4 ounces in 2 gallons of water, add the following mixture, and ferment with yeast in the usual way:

Tincture of hops ..... ½ ounce.
Oil of cinnamon ..... 5 minims.
Ess. of jargonelle pear...10 minims.
Tincture of capsicum.... ½ dram.
Conc. infusion of quassia to ..... 1 ounce.

(Non-Alcoholic Hop Stout.)

Hops ..... 1 pound.
Boiling water .....10 gallons.

Infuse for six hours, and strain 8 gallons of the clear liquor. In this dissolve—

Sugar ..... 4 pounds.
Caramel ..... 4 ounces.
Licorice-juice ..... 4 ounces.

Again strain, and when the temperature is at 75 degrees F., add a quart of ext. malt, and 6 ounces of fresh unwashed brewers' yeast. Ferment for thirty hours, strain through twill, and bottle.

Raspberry Wine Essence.

Tartaric acid..... 2 ounces.
Essence of raspberry.... 1½ ounces.
Tincture of orris..... 1 ounce.
Cochineal coloring ..... 5 ounces.
Caramel ..... ½ ounce.
Salicylic acid..... ½ dram.
Water to .....20 ounces.
M.

To be put up in 4-ounce bottles, the contents being sufficient to make "wine" with 4 pounds of sugar and three wine-bottlefuls of water. Strawberry and other fruit essences may take the place of the raspberry, but to the extent of 2½ ounces, as the orris must be omitted.

Herb Beer Extract.

Extract of licorice..... ½ ounce.
Gentian-root ..... ½ ounce.
Hoarhound ..... 1 ounce.
Hops ..... 1 ounce.
Ginger ..... 2 ounces.
Water ..... 1 pint.

Boil the first three ingredients in the water, then add the others, and infuse for two hours; strain and wash with warm water to 15 ounces. In this dissolve 4 ounces of glucose, and add the following solution:

Oil of cassia .....10 minims.
Oil of wintergreen ..... 6 minims.
Salicylic acid ..... ½ dram.
Rectified spirit ..... 1 ounce.

Mix thoroughly.

Foam for Aerated Waters.

Quillaia-bark, in coarse powder ..... 4 ounces.
Boiling water .....15 ounces.

Simmer gently for fifteen minutes; when almost cool add spt. vini rect. 5 ounces; macerate for a couple of days, strain and filter.

Lemon Squash.

Sugar .....32 ounces.
Citric acid ..... 1 ounce.
Water .....24 ounces.

Dissolve and add the following, previously mixed and filtered:

Salicylic acid ..... ½ dram.
Oil of lemon..... ½ dram.
Tincture of lemon-peel.. 1 ounce.

Tincture of turmeric..... ½ dram.
Caramel .....20 minims.

Shake up the tincture of lemon with the oil now and then during four hours; allow the oil to separate, decant the tincture from it, mix the tincture with the other ingredients, and filter.

Aromatic Ginger Ale Essence.

Cort. cinnamon ..... 1 ounce.
Caryophyllae ..... 3 drams.
Sem. cardamom ..... ½ ounce.
Fruct. capsici ..... 1 dram.
Ess. zingib. sol..... 2 pints.

Macerate four days and filter. Color with caramel.

Ginger Ale Essence.

Ol. ros. geranii ..... 5 minims.
Otto rosae .....10 minims.
Ol. caryoph.....10 drops.
Ol. cinnamon ..... ½ dram.
Tr. capsici ..... 6 drams.
Sacch. ust..... q. s.
Ess. zingib. sol. ad..... 1 pint.
M.

Use 1½ ounces of essence to the gallon of syrup.

Kola Champagne Essence.

Fluid extract of kola..... 4 ounces.
Tincture of canella..... ½ ounce.
Tincture of orange..... 2 ounces.
Essence of cherry..... 3 drams.
Essence of cloves..... 2 drams.
Proof spirit to.....20 ounces.
Mix.

Two ounces to the gallon of syrup, and color with cochineal.

Kola Elixir.

Powdered kola ..... 2 ounces.
Glycerine .....14 drams.
Rectified spirit .....10 drams.
Cinnamon water ..... 6 ounces.
Essence of vanilla ..... 1 dram.
Tincture of orange..... 1 ounce.

Macerate for a week, and filter. More essence of vanilla may be added if desired.

Punch.

An excellent winter cordial.

Citric acid ..... 2 drams.
Benzoic acid ..... ½ dram.
Brandy ..... 5 ounces.
Rum ..... 1½ ounces.
Sugar ..... 3 ounces.
Boiling water ..... 1 pound.
Mix.

Chartreuse.

Oil of melissa ..... 6 minims.
Oil of angelica ..... ½ dram.
Oil of cloves ..... 6 minims.
Oil of peppermint.....40 minims.
Oil of hyssop..... 6 minims.
Oil of nutmeg ..... 6 minims.
Oil of cinnamon ..... 6 minims.
Rectified spirit ..... 1 gallon.
Sugar ..... 8 pounds.
Water to ..... 2½ gallons.

Mix, and color yellow or green as desired.

Ginger Beer. A

Jamaica ginger..... 2½ ounces.
Moist sugar ..... 2 pounds.
Cream tartar ..... 1 ounce.
Lemons, juice and peel.. 2
Brandy ..... ½ pint.
Good ale yeast ..... ¼ pint.
Water ..... 3½ gallons.

This will produce 4½ dozen bottles of excellent ginger beer, which will keep twelve months. Boil the ginger and sugar for 20 minutes in the water, slice the lemons, and put them and the cream of tartar in a large pan; pour the boiling liquor over them and stir well; when milk warm, add the yeast; cover and let it remain 2 or 3 days, skimming frequently; strain

through a cloth into a cask, and add the brandy. Bung down very close; at the end of two weeks draw off and bottle; cork very tightly. If it does not work well, add a very little more yeast.

Ginger Beer. B

Brown sugar ..... 2 pounds.
Boiling water ..... 2 gallons.
Cream tartar ..... 1 ounce.
Bruised ginger root..... 2 ounces.

Infuse the ginger in the boiling water, add the sugar and cream of tartar; when luke warm strain; then add ½ pint good yeast. Let it stand all night, then bottle; if you desire you can add one lemon and the white of an egg to fine it.

English Ginger Beer.

Water ..... 3 gallons.
Pulverized ginger ..... 6 ounces.
Sugar ..... 4 pounds.
Cream tartar ..... 4 ounces.

Boil, and when cold add 2 tablespoonfuls of yeast. Allow it to stand over night, then filter and bottle.

Ginger Beer Powder.

Jamaica ginger, powdered 1 ounce.
Sodium bicarbonate ..... 7 ounces.
Sugar ..... 1¾ pounds.
Oil of lemon ..... 1 fl. dram.

Make into powders.

Ginger Beer Powder.

Ginger, bruised ..... ½ ounce.
Cream of tartar ..... ¾ ounce.
Essence of lemon ..... 4 drops.

Mix.

Some sugar may be added if it be thought desirable to make the packet look bigger. For use this powder is to be added to a gallon of boiling water, in which dissolve 1 pound of lump sugar, and when the mixture is nearly cool two or three tablespoonfuls of yeast are to be added. The mixture should be set aside to work for four days, when it may be strained and bottled.

Hop Beer.

Water ..... 5 quarts.
Hops ..... 6 ounces.

Boil three hours, strain the liquor, add:

Water ..... 5 quarts.
Bruised ginger ..... 4 ounces.

Boil a little longer, strain, and add:

Sugar ..... 4 pounds.

When milk warm,

Yeast ..... 1 pint.

Let it ferment; in 24 hours it is ready for bottling.

Lemon Beer. A

Boiling water ..... 1 gallon.
Lemon, sliced..... 1
Bruised ginger ..... 1 ounce.
Yeast ..... 1 teacupful.
Sugar ..... 1 pound.

Let it stand 12 to 20 hours, and it is ready to be bottled.

Lemon Beer. B

Put in a keg:

Water ..... 1 gallon.
Sliced lemon 1
Ginger ..... 1 tablespoonful.
Syrup ..... 1 pint.
Yeast ..... ½ pint.

Ready for use in 24 hours. If bottled, tie down the corks.

Maple. A

Boiling water ..... 4 gallons.
Maple syrup ..... 1 quart.
Essence of vanilla..... ½ ounce.

Add

Yeast ..... 1 pint.

Proceed as with ginger pop.

Maple. B

Boiling water ..... 4 gallons.
Maple syrup ..... 1 quart.
Essence of spruce..... ½ ounce.
Add
Yeast ..... 1 pint.

Let it ferment for 24 hours, and then strain and bottle it. In a week or more it will be ready for use.

Molasses Beer.

Molasses .....14 pounds.
Hops ..... 1½ pounds.
Water .....36 gallons.
Yeast ..... 1 pound.

Boil the hops in the water, add the molasses and ferment.

Ottawa Beer.

Sassafras ..... 1 ounce.
Allspice ..... 1 ounce.
Yellow dock ..... 1 ounce.
Wintergreen ..... 1 ounce.
Wild cherry bark ..... ½ ounce.
Coriander ..... ½ ounce.
Hops ..... ¼ ounce.
Molasses ..... 3 quarts.

Put boiling water on the ingredients, and let them stand 24 hours. Filter and add
Brewer's yeast ..... ½ pint.

Leave again 24 hours, then put it in an ice cooler, and it is ready for use. It is a wholesome drink, if it is used in moderation.

Peruvian Beer, Carbonated.

Syrup ..... ½ gallon.
Add
Extract of cinchona or Peruvian bark ..... 1 ounce.

This may be flavored with 1 ounce of essence sarsaparilla or root beer.

Root Beer. A

Boiling water ..... 5 gallons.
Add
Molasses ..... 1½ gallons.

Allow it to stand for 3 hours, then add:
Bruised sassafras bark.... ¼ pound.
Wintergreen bark ..... ¼ pound.
Sarsaparilla root ..... ¼ pound.
Fresh yeast ..... ½ pint.

Water, enough to make 15 to 17 gallons.

After this has fermented for 12 hours it can be drawn off and bottled.

Root Beer. B

Pour boiling water on
Sassafras ..... 2½ ounces.
Wild cherry bark..... 1½ ounces.
Allspice ..... 2½ ounces.
Wintergreen bark ..... 2½ ounces.
Hops ..... ½ ounce.
Coriander seed ..... ½ ounce.
Molasses ..... 2 gallons.

Let the mixture stand 1 day. Strain, add—
Yeast ..... 1 pint.
Enough water to make....15 gallons.

This beer may be bottled the following day.

Root Beer. C

Sarsaparilla ..... 1 pound.
Spice wood ..... ¼ pound.
Guaiacum chips ..... ½ pound.
Birch bark ..... ⅛ pound.
Ginger ..... ¼ ounce.
Sassafras ..... 2 ounces.
Prickly ash bark..... ¼ ounce.
Hops ..... ½ ounce.

Boil for 12 hours over a moderate fire with sufficient water, so that the remainder shall measure 3 gallons, to which add—
Tincture of ginger..... 4 ounces.
Oil of wintergreen..... ½ ounce.
Alcohol ..... 1 pint.

This prevents fermentation.

Root Beer. D

To make root beer, take of this decoction 1 quart.

Molasses ..... 8 ounces.
Water ..... 2½ gallons.
Yeast ..... 4 ounces.

This will soon ferment and produce a good, drinkable beverage. The root beer should be mixed, in warm weather, the evening before it is used, and can be kept for use either bottled or drawn by a common beer pump. Most people prefer a small addition of wild cherry bitters or hot drops to the above beer.

Spruce Beer. A

Hops ..... 2 ounces.
Chip sassafras ..... 2 ounces.
Water .....10 gallons.

Boil half an hour, strain, add—

Brown sugar ..... 7 pounds.
Essence of spruce ..... 1 ounce.
Essence of vanilla ..... 1 ounce.
Ground pimento ..... ½ ounce.

Put in a cask and cool, add—

Yeast ..... 1½ pints.

Let it stand 24 hours, fine, draw it off to bottle.

Spruce Beer. B

Hops ..... 8 ounces.
Chip sassafras ..... 2 ounces.
Water .....10 gallons.

Boil half an hour, strain, and add—

Brown sugar ..... 7 pounds.
Essence of spruce..... 1 ounce.
Essence of ginger ..... 1 ounce.
Ground pimento ..... ½ ounce.

Put into a cask, and cool, add—

Yeast .....1½ pint.

Let it stand 24 hours, fine, draw it off to bottle.

Spruce Beer. C

Water ..... 6 gallons.
Essence of spruce ..... 1 pint.
Pimento. .....10 ounces.
Ginger. .....10 ounces.
Hops ..... 1 pound.

After boiling about 10 minutes, add—

Moist sugar .....24 pounds.
Warm water .....22 gallons.

When the ingredients are well mixed, and luke warm, add—

Yeast ..... 1 quart.

Let it ferment 24 hours. Strain, and bottle.

Spruce Beer. D

Sugar ..... 1 pound.
Essence of spruce..... ½ ounce.
Boiling water ..... 1 gallon.

Mix well and when nearly cold add ½ a wineglass of yeast, and the next day bottle.

Spruce Beer. E

Essence of spruce ..... ½ pint.
Pimento ..... 5 ounces.
Ginger, bruised ..... 5 ounces.
Hops ..... ½ pound.
Water ..... 3 gallons.

Boil the whole for 10 minutes, then add—

Moist sugar .....12 pounds.
Warm water .....11 gallons.

Mix well and when luke warm add 1 pint of yeast. After the liquor has fermented for about 24 hours, bottle it.

Spruce Beer. F

Water, 16 gallons; boil half, put the water thus boiled to the reserved cold half, which should be previously put into a barrel or other vessel; then add 16 pounds molasses, with a few spoonfuls of the essence of spruce, stirring the whole together; add half pint of

yeast, and keep it in a temperate situation with the bung hole open for two days, or till fermentation subsides; then close it up or bottle it off, and it will be fit to drink in a few days.

White Spruce Beer.

Five pounds loaf sugar are dissolved in 5 gallons of boiling water, then 2 fl. ounces of spruce are added. When almost cold add a gill of yeast. Place in warm place and after 24 hours strain through a piece of flannel and bottle.

Table Beer.

"Table beer of a superior quality may be brewed in the following manner, a process well worth the attention of the gentleman, the mechanic, and the farmer, whereby the beer is altogether prevented from working out of the cask, and the fermentation conducted without any apparent admission of the external air. I have made the scale for one barrel in order to make it more generally useful to the community at large; however, the same proportions will answer for a greater or less quantity, only proportioning the materials and utensils. Take one peck of good malt, ground, 1 pound of hops, put them in twenty gallons of water, and boil them for half an hour; then run them into a hair cloth bag or sieve, so as to keep back the hops and malt from the wort, which, when cooled down to 60 degrees by Fahrenheit's thermometer, add to it 2 gallons of molasses, with 1 pint, or a little less, of good yeast. Mix these with your wort, and put the whole into a clean barrel, and fill it up with cold water to within six inches of the bung hole (this space is requisite to leave room for fermentation), bung down tight. If brewed for family use, would recommend putting in the cock at the same time, as it will prevent the necessity of disturbing the cask afterward. In one fortnight this beer may be drawn and will be found to improve."—Eng. Mech.

Root Beer Extract.

Tincture of ginger	12	ounces.
Extract of vanilla	12	ounces.
Oil of sassafras	4	ounces.
Oil of wintergreen	2	ounces.
Oil of anise	1	ounce.
Oil of orange	¼	ounce.
Oil of cloves	¼	ounce.
Alcohol	½	gallon.
Simple syrup	3½	gallons.
Tinct. soap bark	4	ounces.
Salicylic acid	1	dram.
Caramel	1¼	gallons.
Water q. s. to make up to.	6	gallons.

Dissolve the oils and salicylic acid in the alcohol; mix the syrup, water and caramel and add the other ingredients.

Acid Solution of Phosphates.

Potassium phosphate	1 part.
Magnesium phosphate	2 parts.
Sodium phosphate	1 part.
Calcium phosphate	3 parts.
Ortho-phosphoric acid	48 parts.
Water sufficient to make	768 parts.

Mix and dissolve.

Acid phosphate fruit syrup contains 8 ounces of this solution to the finished gallon, the latter consisting of from 6½ to 7 pints (usually the latter) of simple syrup, the remainder being the material which go to make up the fruit flavor.

LIQUEURS, ETC.

The following formulas for bitters, cordials, German and French liqueurs, are taken from Finchett's Cordial and Liqueur Makers' Guide. Where spirits of wine is prescribed, use cologne spirits 188 per cent.

Ten Gallons of Peppermint.

Mix half an ounce of best oil of peppermint with a pint of strong spirits of wine, shaking it about well; put this into your cask. Next put in three gallons of clean rectified spirit proof. Dissolve thirty pounds of good lump sugar in three gallons of hot water; put this to your other ingredients, and fill the cask up to within an inch of the top with water. Fine it with one ounce of alum, dissolved in boiling water; put it into the cask hot, and stir it about well; then put in half an ounce of salts of tartar, and rouse it up again; in a day or two it should be perfectly bright.

Ten Gallons of Cloves.

Mix one ounce of oil of cloves with a pint of strong spirits of wine, put it in your cask; then add three gallons of clean rectified spirit proof, and stir the whole well together. Dissolve twenty-eight pounds of lump sugar in three gallons of boiling water; put this to the other ingredients, and fill the cask to within an inch of the top with water. Fine it down with one ounce of alum, dissolved in boiling water, and put into the cask hot; afterwards put in half an ounce of salts of tartar, and rouse it up well; in a day or two it will be perfectly bright. This cordial is usually colored pink; sometimes red, brown, etc.

Ten Gallons of Rum Shrub.

Procure one gallon and three quarters of bitter Seville orange juice (or, what is preferable, buy the oranges, cut them in half, and squeeze them yourself); put it into your cask, and add three gallons of proof rum. Dissolve thirty pounds of lump sugar in three gallons of boiling water, and put it to the other ingredients, and fill the cask to within an inch of the top with water. Fine it down as follows: Pound fine one ounce of chalk, and lay it in front of a fire until perfectly dry, stir this into the cask; and lastly, add half a pint of the ale finings, stirring it up again. It will very likely be upwards of a week before it is fit for use.

Ten Gallons of Aniseed.

Mix one ounce and a dram of oil of aniseed with a pint of strong spirits of wine, shaking it up well; put it in your cask, and add three gallons of clean rectified spirit proof. Dissolve thirty-two pounds of lump sugar with three gallons of boiling water, and mix it with the other ingredients. Fill your cask to within an inch of the top with water, and fine with two ounces of alum dissolved in boiling water, and put into the cask hot, afterwards adding one ounce of salts of tartar, and rouse well up.

Ten Gallons of Caraway.

Mix one ounce of oil of Caraway with a pint of strong spirits of wine, shaking it well in a bottle; put it in your cask, and add two gallons more of spirits of wine. Dissolve thirty-four pounds of lump sugar in four gallons of boiling water, and put it to the other articles. Fill the cask up with water, and fine down with two ounces

of alum dissolved in boiling water, and put into the cask hot. Afterwards add one ounce of salts of tartar, and rouse the whole well together.

Ten Gallons of Noyeau.

Mix half an ounce of essential oil of bitter almonds with a quart of strong spirits of wine, and shake it well; put it into your cask, and add a quarter of an ounce of oil of cassia, dissolved in another pint of spirits of wine. Next put in three gallons of clean rectified spirit proof, and rouse them up well. Dissolve thirty-two pounds of good lump sugar in three gallons of boiling water, and mix all together. Fill up the cask with water, and fine with two ounces of alum dissolved in boiling water, put into the cask hot; and lastly, one ounce of salts of tartar. Stir the whole well together.

Ten Gallons of Raspberry.

Buy the fruit fresh gathered, and squeeze it through a bag made of cheese cloth. When you have got five gallons of juice, put it in your cask, with thirty pounds of common lump sugar dissolved in two gallons of boiling water. Add two gallons of strong spirits of wine, and rouse the whole well together. Then draw off about half a gallon of the mixture, and stir into it a quarter of a pint of brandy coloring; return this to the cask, and rouse well up again. Fine it down with half a pint of ale finings.

Ten Gallons of Gingeretta.

Bruise two pounds of good ginger with a hammer, and steep it in five quarts of spirits of wine for a fortnight in a close stoppered bottle, shaking it up frequently; pour off the spirit, and put into the cask. Continue to put a quart of water into the bottle with the ginger every day, pouring it off each time, until by tasting it you find all the spirit has been washed out; put this likewise into the cask. Add two gallons of white sherry wine, a quarter of a pint of brandy coloring, thirty pounds of lump sugar, and a quarter of an ounce of citric acid, dissolved in three gallons of boiling water. Fill the cask up with water, and fine it down with half a pint of ale finings.

Ten Gallons of Orange Bitters.

Take five pounds of dry Seville orange peel cut into small pieces, one ounce of caraway seeds, and six ounces of coriander seeds, bruised. Steep all in three gallons of proof spirit for a month; pour off the spirit through a hair sieve, and return all the seed into the bottle; wash out all the remaining spirit in the ingredients, by putting a quart of water daily, and pouring off each time, until by tasting you find there is none left. Add twenty pounds of lump sugar dissolved in two gallons of boiling water, and half a pint of brandy coloring; fill up the cask with water. Fine it down with two ounces of alum dissolved in boiling water, and put into the cask hot; afterwards stir in one ounce of salts of tartar.

Three Gallons of Wormwood Bitters.

Take two drams of oil of orange, one dram of oil of caraway, one dram of oil of wormwood, a quarter-ounce of almond cake, half ounce of coriander seeds, half-ounce of Virginia snake root. Mix the oils with a quart of spirits of wine; also the other ingredients, well bruised, with another quart of spirits of wine. Let them stand a fortnight, and shake frequent-

ly; then strain, and add five pounds of sugar dissolved in hot water. Fine it with half an ounce of alum boiled in half a pint of water.

Ten Gallons of Lemonade.

Dissolve one pound of citric, and half a pound of tartaric acid in three gallons of boiling water, add seven gallons of capillaire; and if wanted to keep any time, also add a quart of spirits of wine. Mix well together.

Ten Gallons of Capillaire.

Break eighty pounds of finest lump sugar into a copper, and add five gallons of water; keep stirring it until it boils; then add a tablespoonful of pyroligneous acid, and stir it well in; keep boiling a quarter of an hour, and leave it in the copper until cold; draw off clear from the sediment.

Ten Gallons of Cherry Brandy.

Buy the largest black cherries you can get—mash them first in a tub, and squeeze them through a bag made of sampler cloth, until you have five gallons of juice, which put into your cask, with two gallons of strong spirits of wine. Dissolve twenty-six pounds of lump sugar in two gallons of boiling water; add a quarter of a pint of brandy coloring; also a dram of oil of cloves, mixed with half a pint of spirits of wine. Fine it down with two ounces of alum, dissolved in boiling water, and put into the cask hot; afterwards add one ounce of salts of tartar, and stir the whole well together.

Ten Gallons of Cinnamon.

Mix one ounce of oil of cinnamon with a quart of strong spirits of wine, shaking it up well in a bottle; next put in three gallons of clean rectified spirit proof. Dissolve twenty-six pounds of lump sugar in three gallons of boiling water; put this into the cask with the spirit, and fill up to within an inch of the top with water. Fine it down with two ounces of alum dissolved in boiling water, and put into the cask hot; afterwards add one ounce of salts of tartar, and rouse the whole well up.

Ten Gallons of Lovage.

Mix five drams of oil of nutmegs, five drams of oil of cassia, and three drams of oil of caraway, in a quart of strong spirits of wine; shake it up well in a bottle; put it into the cask, with two gallons more of spirits of wine. Dissolve twenty pounds of lump sugar in hot water; add this to the spirit, with a quarter of a pint of coloring, and fill the cask up with water. Fine it down with two ounces of alum, dissolved in boiling water, and put into the goods hot; afterwards add one ounce of salts of tartar, and stir the whole well together.

Ten Gallons of Usquebaugh.

Take two drams each of oil of juniper aniseed, nutmeg, and cloves, and one dram of oil of cassia; mix the whole of them, one after the other, with two gallons of strong spirits of wine. Add twenty pounds of lump sugar dissolved in boiling water, and a quarter of a pint of coloring. Fill up the cask with water, and fine with one ounce of alum dissolved in boiling water, and put into the cask hot; and lastly, half an ounce of salts of tartar. Stir the whole well together.

Coloring Materials for Liqueurs.

Red.—Steep four ounces of raspings of red sanders wood in a pint of strong

spirits of wine for a fortnight; strain and filter.

Red.—Steep three ounces of cochineal, finely powdered, in a pint of strong spirits of wine for a fortnight; add two drams of powdered alum and filter through blotting paper.

Blue.—Steep four drams of indigo in a bottle, with two ounces of sulphuric acid, for several days, frequently putting the bottle into hot water; add half a pint of distilled water and filter.

Yellow.—Steep one ounce of saffron in half a pint of spirits of wine for a week, and filter.

Green.—Mix equal parts of blue and yellow coloring as above, and it will make a good green.

Violet.—Mix one part of blue with two of red liquor as above—the product will be a fine violet.

Pink.—Steep four ounces of Cudbear in a quart of strong spirit for a fortnight, and filter.

Brandy Coloring.

Put twenty-eight pounds of lump sugar into a brass or iron pan with five parts of water, and boil it until quite black on the top. Add one gallon and a half of boiling water, and boil it ten minutes longer.

Yellow Coloring.

Two ounces of turmeric or saffron root bruised, put into a pint of spirits of wine for a month, shaking it frequently; filter through blotting paper.

British Brandy.

To ten gallons of cleanest rectified spirit put two ounces of bitter almond meal, half an ounce of mace pounded, half an ounce of orris root sliced, and one ounce of cassia buds ground; shake it frequently for a fortnight, and then add one ounce of terra japonica finely pulverized, two ounces of sweet spirits of nitre, and half a pound of prunes. Let it be well roused up; and after it has stood another fortnight, it will be fit for use. Color with brandy coloring, if you need it darker.

Spirit Beading.

To put a fine bead on fifty gallons of weak spirits.—Take one dram of oil of vitriol, and one dram of oil of sweet almonds; rub them together in a marble mortar, and when well incorporated add by degrees half a pint of spirits of wine; mix with the spirits, and rouse up well.

Gin Flavoring.

Take one ounce of oil of juniper, one dram of oil of sweet fennel, four ounces of essence of angelica, and an ounce of tincture of capsicums; mix altogether in a quart of strong spirits of wine; add to it one gallon of syrup. If gin is reduced to a very low strength, add as much as will fetch up the flavor.

Finings for a Butt of Sherry Wine. (120 Gallons.)

Put two ounces of isinglass into a jar with one quart of sherry, near the fire; when soft, beat and whisk it up to a froth with the whites of six eggs; thoroughly mix the whole with a gallon of the wine, and return it to the cask; rouse the whole well up. This will answer equally well for marsala, madeira, etc.

Finings for a Pipe of Port Wine. (120 Gallons.)

Take the whites and shells of sixteen eggs, and beat them up to a froth

in a tub; add half a gallon of the wine, and whisk it well up again; put the mixture into the cask, and rouse the whole well up. The same for red cape.

Ale and Porter Finings.

Take any quantity of isinglass, and put it into a tub or pan with sufficient hard ale or porter to cover it; as the glass swells, keep adding more liquid, until the whole is formed into a stiff jelly; rub it through a hair sieve, and add hard ale or porter until the whole is of the consistency of thick cream. A pint of this is sufficient for a barrel of ale or porter.

Finings for Gin, Whisky, etc.

For 100 gallons, take two ounces of alum, and boil it in a quart of water for a few minutes; put it into the liquor hot, and add one ounce of salts of tartar; rouse well up.

To Make 100 Gallons of Gin.

To eighty-two gallons of clean rectified spirit proof add the following:

Oil of juniper ..... 1½ ounces.
Essence of angelica ..... 1½ ounces.
Oil of sweet fennel..... ¼ ounce.
Oil of bitter almonds.... ½ ounce.
Oil of coriander..... 1 ounce.
Oil of caraway ..... ½ ounce.

Mix the whole of the oils with a gallon of spirits of wine 60 o. p., having first taken the precaution of rubbing them down in a mortar with a little lump sugar; add this to the spirit, and after having well mixed the whole, add seventeen gallons of water. Fine it down with

Alum ..... 4 ounces.
Salt of tartar..... 4 ounces.

UNOFFICIAL PILLS.

Roback's Pills.

Gum gamboge .....100 pounds.
Socotrine aloes .....100 pounds.
Powdered may apple .... 16½ pounds.
Powdered cayenne ..... 4 pounds.
Mix and mass.
Make into 3 grain pills.

Sir Andrew Clark's Pills.

Ferri sulph..... ½ grain.
Aloin ..... ½ grain.
Ext. nuc. vom..... 1-3 grain.
Ext. belladon..... ¼ grain.
Myrrhae pulv..... 1½ grains.
M. Ft. pil. sec. art.

Antibilious and Liver Pills.

Pulv. antim. tart.....48 grains.
Pil. hydrarg.1 ounce, 1 dram, 36 grains.
Pulv. gambogiae .....
.....1 ounce, 1 dram, 36 grains.
Pulv. capsici .....
.....2 drams, 1 scruple, 24 grains.
M. Ft. mass. Divide in 4-gr. pills.
One at bedtime.

Pills for Chronic Constipation.

Aloes ..... 4 grains.
Strychniae sulphat..... ¼ grain.
Extract belladonnae..... 1¼ grains.
Ipecac, pulv..... 5½ grains.
M. Divid. in pil. 12.
Sig.: One every evening.

Arsenical Pills for the Complexion.

These contain very little arsenic. The following is a safe prescription:

Ferri arseniatis ..... 2 grains.
Ferri redact ..... 1½ drams.
Pil. rhei co..... 2 scruples.

Ext. nucis vom.....10 grains.
Glycer. tragac..... q. s.
Ft. mass. et div. in pil. 60.
One thrice daily with food.
For lozenges and tablets use arseniate of soda, 1-30 grain in each.

Gravel and Lumbago Pills.

Potass. nitrat..... 2 grains.
Pulv. ipecac..... ½ grain.
Pulv. scillae ..... ½ grain.
Ext. belladonnae ..... ¼ grain.
Ext. gentianae ..... q. s.
Ft. pil.
A pill to be taken thrice daily with half a tumblerful of B. P. potash-water.

Digestive Pills.

Pulv. ext. coloc. co..... 1 dram.
Bismuth, trisnit..... 1 dram.
Ext. hyoscyam..... ½ dram.
Cayenne ..... 1 scruple.
Sp. vin. ten.....q. s. ut ft. mass.
4-grain pills.
One an hour before dinner.

Neuralgic Pills.

Quininae sulph..... 1 grain.
Ext. aloes aq..... ½ grain.
Ferri sulph. ex..... 1½ grains.
Ext. bellad..... ⅛ grain.
Ext. gentian..... 1½ grains
Pulv. capsici..... 1 grain.
Pulv. camph..... 1 grain.
M. Ft. pil. 2.

Pills for Spermatorrhoea.

Zinci valer..... 3 grains.
Ext. bellad.....1-6 grain.
Quininae sulph..... 1 grain.
Conf. rosae .....q. s. ut. ft. pil 1.
Mitte 24.
Sig.: One t. d. s.

Toothache Pills.

Pulv. rhei.....12 grains.
Quininae sulph. ..... 24 grains.
Camphor. ..... 12 grains.
Ext. hyoscyam ..... 36 grains.
M. Ft. pil. 24.
One every four hours until relieved.

Menthol Pastilles.

Gelatine ..... 1 ounce.
Glycerine (by weight)... 2½ ounces.
Orange-flower water..... 2½ ounces.
Menthol ..... 5 grains.
Rectified spirit ..... 1 dram.

Soak the gelatine in the water for two hours, then heat on a water-bath until dissolved and add 1½ ounces of the glycerine. Dissolve the menthol in the spirit, mix with the remainder of the glycerine, add to the glyco-gelatine mass, and pour into an oiled tin tray (such as the lid of a biscuit-box). When the mass is cold divide it into ten dozen pastilles.

Menthol pastilles are an excellent remedy for tickling cough as well as laryngitis. They should be freshly prepared, and cut oblong, so that the patient may take half of one, or less, as he finds them suit.

Little Liver Granules.

Aloin ..... 1-10 grain.
Jalap resin ..... 1-16 grain
Podophyllin ..... 1-5 grain.
Ext. nux vomica..... 1-20 grain.
Extract hyoscyamus ..... 1-20 grain.
Oleoresin capsicum..... 1-20 grain.

Little Liver Granules.

Jalap resin ..... 1-16 grain.
Leptandrin ..... 1-16 grain.
Aloin ..... ⅛ grain.
Podophylin ..... ¼ grain.
Powdered gamboge ..... 1-32 grain.

Powdered capsicum ..... 1-64 grain.
Extract hyoscyamus ..... ⅛ grain.
Oil peppermint .....1-128 grain.

Chill Pills.

Quinine ..... 40 grains.
Ext. cinchona ..... 30 grains.
Oil of black pepper..... 12 drops.

Make into 24 pills in capsules or sugar coated.

Directions: After a chill take at bedtime a dose of Co-Cathartic pills, early next morning take two of the chill pills; and the same number every two hours until 14 are taken.

The following day take one pill every two hours, until 5 are taken.

Martindale's Phosphorus Pills.

(Ch. and Dr)

Phosphorus ..... 10 grains.
Oil of theobroma.....490 grains.
Bisulphide of carbon.....200 grains.
Or. q. s. to.....750 grains.
Take of above sol..... 54 grains.
Acacia ..... 18 grains.
Syrup ..... 18 grains.

Divide into 24 pills.

3 grains equal 1-33 grain phosphorus.

Ten grains of phosphorus is dissolved in 200 fl. grains of purified carbon bisulphide, and 490 grains of shredded cocoa-butter added and dissolved by shaking; then the solution is made up to 750 fl. grains with bisulphide.

The solution keeps indefinitely, but it is apt to become solid in cold weather; the heat of the hand, however, suffices to liquefy it. The desired quantity of it is mixed with powdered acacia, stirred for a little and the syrup added, when a mass suitable for rolling is soon produced. The pills may be varnished with sandarac, but should be thoroughly dried after varnishing, otherwise they may stick together in the bottle. They keep well if the coating is perfect. They also take the pearl coating well. The pills are more easily made, more quickly assimilated, and do not cause so much disturbance as others. Mr. Martindale has put them to a number of tests, and he referred to the objections which may be urged against the mass, particularly its comparative softness. This, he said, can be obviated by using glucose instead of syrup, and as to the permanence of the pill in warm climates, he could only say that he had carried one in the pocket without affecting it, and when put in water at 90 degrees F., a pill did not fail.

Phosphorus Pills.

Phosphorus ..... 1 grain.
Chloroform ..... 10 minims.

Dissolve and mix with

Powdered licorice..... 1 dram.
Water ..... 20 minims.

Then mass with

Ext. nux vomica..... 10 grains.
Powd. tragacanth..... q. s.

Divide into 50 pills.

Antimalarial Pills.

Phosphorus ..... 1-100 grain.
Strychnia ..... 1-64 grain.
Arsenious acid ..... 1-20 grain.
Iron by hydrogen..... 1½ grains.
Quinine sulph. ..... 1½ grains.
Purified aloes ..... ¼ grain.

Neuralgic Pills.

Brown Sequard's.

Ext. henbane ..... 2-3 grain.
Ext. conium ..... 2-3 grain.
Ext. ignatia bean ..... ½ grain.
Ext. opium ..... ½ grain.
Ext. aconite ..... ⅛ grain.
Ext. cannabis indica ..... ¼ grain.
Ext. stramon ..... 1-5 grain.
Ext. belladonna.....1-6 grain.

METHODS AND TABLES FOR PERCENTAGE SOLUTIONS.

Western Druggist.

In view of the ever-recurring question concerning the method of calculating percentage solutions we find ourselves compelled to refer to this frequently discussed subject once more, devoting more space to it than ordinarily, so as to cover the question.

Percentum means, for each hundred. Percentage by weight means that all ingredients shall be weighed; percentage by volume means that all ingredients shall be measured. A 1-per-cent cocaine solution, hence, contains 1 grain of cocaine and 99 grains of water; a 2-per-cent cocaine solution necessarily contains 2 grains of cocaine hydrochlorate and 98 grains of water, and so on. A fluid ounce (480 minims) of distilled water at normal temperature weighs approximately 455.5 grains, so that 1 per cent of 1 fluid ounce is as the proportion, 100:1::455.5:4.555. Subtracting 4.5 grains from 455.5 grains gives us 451 grains of water in which to dissolve 4.5 grains of cocaine, the resulting solution weighing 455.5 grains. In this calculation we have assumed 1 grain of cocaine to occupy the same space as one minim of water. But this is not the case and our 1-per-cent. cocaine solution measures probably two or three minims less than 1 fluid ounce.

If it be desirable to dispense exactly 1 fluid ounce of the solution in question, the only practical way to proceed, on a small scale and extemporaneously, is to prepare a little more than wanted and throw away the surplus. To insure the full volume of 480 minims, take 455.5 grains as a starting point; to this add the percentage required in grains, say 4. We then have 459.5 grains as the weight of the finished product, 4 per cent of which is 100:4::459.5:18:38. The 18.38 subtracted from the whole 459.5, gives us 441.12 grains of water and 18.38 grains of cocaine in a total of 459.5 grains of finished solution. This will measure more than 480 and less than 494.38 minims, depending on the bulk the cocaine assumes in liquefied form.

The calculations, it must be borne in mind, are based on water as a solvent and on a low percentage. The principle, but not the figures, holds good with respect to fluids specifically lighter or heavier than water, while in high percentages, exceeding, say, 10 per cent, the increase in bulk is, especially for expensive material and large quantities, sufficiently serious to require preliminary experimental determinations.

An exceedingly practical method for preparing a fluid ounce of a solution of a given percentage has been suggested by an esteemed correspondent, H. M. Wilder, of Philadelphia. His method is in effect the same as explained above, excepting that it does not require careful calculations. Its only possible drawback could be that the excess obtained being about one-tenth of an ounce (difference between 456 and 500 grains) would make the waste (when 4 p. c. or over) when operating with costly material quite appreciable; especially when more than one fluid ounce of solution be dispensed. Mr. Wilder's method, which he has employed for many years, is as follows:

In order to make one fluid ounce of 4 per cent solution, he takes the nearest round number, which is 500. He dissolves 5 times 4 grains of the salt

in 500 less 20 grains of the menstruum (water or other solvent of similar specific gravity) and concludes that he now has a 4 per cent solution. If he now measures off one fluid ounce, he must necessarily have a fluid ounce of a 4 per cent solution. As to the surplus of solution, that is thrown away; what little loss that may amount to is more than compensated for by the ease of calculation, without bothering oneself about fractions.

In 1891 C. C. Sherrard, of Detroit, Mich., published in the New Idea tables for preparing solutions, which, on account of their practicality, deserves reproduction. We quote Mr. Sherrard's article in full:

"With a view of economizing time, the following tables for preparing percentage solutions have been carefully figured out. Many pharmacists closely engaged in the practice of their art will find that these tables will save them much valuable time and also remove the possibility of error incidental to rapid calculation and figuring. That there is a need for such a table is shown by the frequent requests for information of this sort. The table is simple and requires but little explanation. There are two tables, the first giving percentage solutions, as, for instance, 4 per cent cocaine muriate solution; the second gives parts in 1,000 or 5,000, as, for instance, corrosive sublimate 1 in 1,000. The use of the first is as follows: Run down column 1 until the correct percentage wanted is found, then move to the right along the line until the column is found giving the amount of fluid measure to be made up; at the intersection will be found the weight of salt required. For example, suppose it is desired to make 4 fluid ounces of 4 per cent cocaine muriate solution, run down the left-hand column to 4, then along to the right till we reach the column headed 4 fluid ounces. At the intersection of the two will be found 72.91, and this is the number of grains needed. It must be remembered that this is the amount of water to take, and not q. s. water to make the volume. Also that these tables are true only for water, and not for alcohol or other fluid. The second table is similarly employed:

FOR MAKING ANY QUANTITY OF PERCENTAGE SOLUTIONS.

	For each 1 fl. oz. of water take of the drug or salt.	For each 2 fl. ozs. of water take of the drug or salt.	For each 3 fl. ozs. of water take of the drug or salt.	For each 4 fl. ozs. of water take of the drug or salt.	For each 5 fl. ozs. of water take of the drug or salt.	For each 10 fl. ozs. of water take of the drug or salt.	For each 16 fl. ozs. of water take of the drug or salt.
To make	Grains.	Grains.	Grains.	Grains.	Grains.	Grains.	Grains.
1 per ct...	4.557	9.114	13.671	18.228	22.785	45.57	72.912
2 per ct...	9.114	18.228	27.342	36.456	45.570	91.14	145.824
3 per ct...	13.671	27.352	41.013	54.684	68.355	136.71	218.416
4 per ct...	18.228	36.456	54.684	72.912	91.14	182.28	291.648
5 per ct...	22.785	45.57	68.355	91.14	113.925	227.85	346.56
10 per ct...	45.57	91.14	136.71	182.28	227.85	455.7	729.12
15 per ct...	68.355	136.71	205.065	273.42	341.775	683.55	1093.68
20 per ct...	91.14	182.28	273.42	364.56	455.70	911.4	1458.24
25 per ct...	113.925	227.85	341.775	455.70	569.625	1139.25	1822.80
40 per ct...	182.28	364.56	546.84	729.12	911.4	1822.8	2916.48

FOR MAKING ANY QUANTITY OF SOLUTION WHEN STATED IN PARTS PER THOUSAND HUNDRED, ETC.

To make a solution of	For each 1 fl. oz. of water take of the drug or salt.	For each 2 fl. ozs. of water take of the drug or salt.	For each 3 fl. ozs. of water take of the drug or salt.	For each 4 fl. ozs. of water take of the drug or salt.	For each 5 fl. ozs. of water take of the drug or salt.	For each 10 fl. ozs. of water take of the drug or salt.	For each 16 fl. ozs. of water take of the drug or salt.
	Grains.	Grains.	Grains.	Grains.	Grains.	Grains.	Grains.
1 in 1,000..	.4557	.9114	1.3671	1.8228	2.278	4.557	7.291
1 in 500....	.9114	1.8228	2.7342	3.6456	4.557	9.114	14.582
1 in 400....	1.139	2.278	3.4177	4.557	5.695	11.392	18.228
1 in 300....	1.519	3.035	4.557	6.076	7.59	15.19	24.304
1 in 200....	2.2785	4.557	6.8355	9.114	11.39	22.785	36.456
1 in 100....	4.557	9.114	13.671	18.228	22.785	45.57	72.912
1 in 50.....	9.114	18.228	27.342	36.456	45.57	91.14	145.824
1 in 25.....	18.228	36.456	54.684	72.912	91.14	182.28	291.648
1 in 10.....	45.570	91.140	136.710	182.280	227.85	455.70	729.120
1 in 5.....	91.14	182.28	273.42	364.56	455.7	911.4	1458.24

Providing other amounts of a solution than those given in the tables are required, it will be a very simple mathematical calculation to determine the amount of drug or salt required for a specified amount of solution. For example, if 4 fluid ounces of a 4 per cent solution is required, follow down the 4 fluid ounce column until opposite 4 per cent; the number of grains required are 72.912 grains. Now, to make 8 fluid ounces, just twice as much (145.824 grains) is required. In a similar manner, any solution of any percentage strength may readily be found by consulting the proper column and per cent.

For all dispensing and administering purposes in any prescribed doses the figures herewith given are correct, and for such purpose this article is especially designed.

In further explanation, we may say that, in giving the above figures, the resulting solution is absolutely correct as regards percentage composition, though it may measure slightly more than the water taken, owing to the increase in volume, which always takes place in some degree when a solid passes into solution in a given amount of liquid. This expansion is not appreciable for small amounts of the solid, say up to 5 per cent, but at 25 per cent or more it may be noticeable. However, as before stated, this expansion has been considered, and the resulting solution, notwithstanding the increase in volume, is correct for the percentage given. From the foregoing explanation it is quite clear that, if a dram of 1-2 per cent solution be prescribed, exactly 2 per cent of that dram is the salt in the solution, the other 98 per cent being the water."

The following simple rule was communicated a few years ago to a pharmaceutical journal by John P. Judge, of Philadelphia:

Rule: Multiply the weight (in grains) of a dram of water by the number of drams desired, multiply this product by the percentage desired. Dividing all this by 100 gives the percentage. The result will be the number of grains to be added to the quantity of solution desired. For easy memorizing, the rule may be run off thus: Multiply the weight of a dram by the number of drams and this by the percentage. Divide by 100 for percentage.

Everyone who uses this rule is struck by its simplicity, facility, compactness and exactness.

SOLUTIONS, ETC.

Clemen's Arsenical Solution.

The following is the mode of preparation of the liquor arsenici bromatus, used in the treatment of diabetes mellitus:

Carbonate potassium..... 1 dram.
Arsenious acid..... 1 dram.
Distilled water.....10 ounces.

Boil until a clear solution is formed and when cold add

Bromine ..... 2 drams.
Water .....12 ounces.

This is allowed to stand until the color disappears when it is ready for use.

Dose: One to 5 drops once or twice a day.

Colorless Hydrastis.

Hydrastis white alkaloid....20 grains.
Water ..... 8 ounces.
Glycerine ..... 8 ounces.

Dissolve alkaloid in 1 or 2 drops of muriatic acid; add water; filter, and add glycerine.

Homoeopathic diluted tinctures are made from the mother tinctures, as follows: The mother tincture is regarded as tincture 1x when it is made of 1-to-10 strength. One part of this mother tincture vigorously shaken with 9 parts of alcohol yields tincture 2x; 1 part of 2x with 9 parts of alcohol yields tincture 3x. The centesimal scale is similarly worked. One part of mother tincture with 9 parts of alcohol yields a tincture 1c; 1 part of this with 99 parts of alcohol yields a tincture 2c, and so on. For full instructions as to all homoeopathic preparations, see Keene & Ashwell's "Companion to the British Homoeopathic Pharmacopoeia."

Liquor Eastoni.

Iron Wire ..... 2½ drams.
Phosphoric acid (s. g. 1.5)
2 ounces. 6 drams.
Water ..... 3 ounces.

Mix in a flask and heat gently until action ceases, then add—

Powdered strychnine.....10 grains.
Phosphate of quinine..... 4 drams.
Hypophosphorous acid.... ½ dram.
Water to.....10 ounces.

One part of this solution is to be mixed with 3 parts of thick syrup.

Solution of Saccharin, N. F.

Saccharin .....512 grains.
Soda bicarb.....240 grains.
Alcohol ..... 4 fl. ounces.
Water, q. s., to make.... 16 fl. ounces.

Dissolve the saccharin and the soda bicarb in 10 fluid ounces of water; filter the solution; add the alcohol to the filtrate, and pass enough water through the filter to make 16 fluid ounces. Each fluid dram represents four grains of saccharin.

Saccharin.

British Unofficial Formulary.

Saccharin .....480 grains.
Bicarbonate of sodium.240 grains.
Alcohol ..... 2½ fl. ounces.
Distilled water, q. s.

Rub the saccharin and bicarbonate of sodium in a mortar, with ½ pint of distilled water gradually added. When dissolved add the spirit; filter, and wash the filter with sufficient distilled water to produce 20 ounces of elixir.

Each fluid dram contains 3 grains of saccharin.

Cochineal Coloring.

Cochineal ..... 1 ounce.
Potassium carbonate..... 1 ounce.
Potassium bitartrate..... 1 ounce.
Alum ..... 1 ounce.
Water .....14 ounces.

Boil till effervescence ceases; filter, and add water to make 16 fluid ounces, in which dissolve 16 ounces of sugar.

ELIXIRS OF CHLORIDES.

The Indiana Pharmacist comments upon the fad for the combining of chlorides or iodides into certain preparations, as elixirs, and offers a few formulas for those most called for (with a little modification and substitution of the iodide for the chloride the elixirs of the iodides can be made in the same manner).

Elixir One Chloride.

Corrosive sublimate..... 2 grains.
Water ..... 8 ounces.
Syrup orange..... 8 ounces.

Dose: Teaspoonful after each meal.

Elixir Two Chlorides.

Tincture chloride of iron.... 1 ounce.
Solution chloride of arsenic. 2 drams.
Simple syrup, to make.....16 ounces.

Dose: Teaspoonful after each meal.

Elixir Three Chlorides.

Corrosive sublimate..... 3 grains.
Chloride of ammonia..... 2 ounces.
Solution chloride of arsenic. 3 drams.
Simple syrup, to make.....16 ounces.

Dose: Teaspoonful after each meal.

Elixir Four Chlorides.

Corrosive sublimate..... 4 grains.
Solution chloride of arsenic. 3 drams.
Hydrochloric acid, dilute.... 4 drams.
Tincture chloride of iron... 8 drams.
Simple syrup, to make.....16 ounces.

Elixir Five Chlorides.

Corrosive sublimate..... 3 grains.
Solution chloride of arsenic. 3 drams.
Hydrochloric acid, dilute.... 3 ounces.
Tincture iron chloride..... 3 ounces.
Ammonia chloride..... 3 ounces.
Simple syrup, to make.....16 ounces.

Dose: Teaspoonful after each meal.

German Red Drops.

Gum camphor..... ¼ ounce.
Powd. capsicum..... 1 ounce.
Oil peppermint..... ¼ ounce.
Oil cassia..... ¼ ounce.
Alcohol ..... 1 gallon.
Aniline red..... 5 grains.
Caramel ..... 1 ounce.
Laudanum ..... 1 pint.
Water ..... 4 pints.

Sedative Liquor.

Powd. black haw..... 2 ounces.
Water ..... 8 ounces.
Alcohol ..... 8 ounces.
Sulph. hydrastis..... 1 dram.
Water ..... 2 ounces.
Sugar, color..... ⅜ ounce.
Fl. ext. Jam. dogwood.... 2 ounces.

Fl. ex. valerian (Eng.).... 1 ounce.
Simple syrup..... 2 ounces.
Simple elixir, or elix. lact. pepsin, q. s., to make... 1 quart.

Percolate the black haw with the 8 ounces of water and 8 ounces of alcohol; dissolve the hydrastia in the 2 ounces of water and mix all the ingredients, adding enough simple elixir or elixir of lactated pepsin to make up to 32 ounces.

Solution of Ferric Salicylate.

A permanent solution of ferric salicylate may be made as follows:

Potassium citrate..... 2 drams.
Glycerine ..... 1 ounce.
Ferric salicylate..... 80 grains.
Water, enough to make..... 4 ounces.

Dissolve the citrate in the glycerine with the aid of heat; add the salicylate of iron in small portions, stirring after each addition until dissolved, and lastly the water, also added gradually. Heat to boiling and filter while hot. The glycerine may be omitted, but if so, the solution will gradually precipitate. A solution thus prepared is of a deep brown color in bulk, lighter and transparent in thin layers, odorless and having a sweetish ferruginous taste. It contains 2½ grains of ferric salicylate to the teaspoonful, but the amount may be increased or decreased as desired.

Improved Styptic Colloid.

Dr. Circular.

Collodion .....100 parts.
Carbolic acid..... 10 parts.
Tannin ..... 5 parts.
Benzoic acid (from the gum) 5 parts.

Mix the ingredients in the order above written until perfect solution is effected. This preparation has a brown color, and leaves, on evaporation, a strongly adherent pellicle. It instantly coagulates blood, forming a consistent clot, and a wound rapidly cicatrizes under its protection.

Iodureted Glycerin.

Iodine .....48 grains.
Pot. Iodid.....96 grains.
Aqua ..... 2 drams.
Glycerin ..... 4 ounces.

Hall's Solution of Strychnine.

Pure crystals strychnine.16 grains.
Water ..... 7½ fl. ounces.
Alcohol ..... 7½ fl. ounces.
Acetic acid..... ½ fl. ounce.
Comp. tinct. cardamom. ½ fl. ounce.
Mix for solution.

Dose: Twenty to 30 drops once or twice a day.

Solution for Storm Glass.

Ammon. chlor.....30 grains.
Potass. nit.....30 grains.
Camphor .....30 grains.
Spt. vin. rect..... 1 ounce.
Aquae ..... 1 ounce. 1 dram.

Weigh S. V. R. into bottle; add camphor and dissolve; then add other solids, lastly the water (warm); shake, and when dissolved, filter into the glass.

The above quantities are all by weight.

SOLUTIONS.

Malate of Iron.

Am. Journ. Pharm.

Cranberry juice.....14 fl. ounces.
Iron, in the form of fine wire and perfectly clean 1 ounce.
Alcohol ..... 2 fl. ounces.

The iron is added to the cranberry juice contained in a suitable vessel

and set aside in a warm place, being occasionally agitated, for several days. It is then boiled for a half to one hour, adding water from time to time to replace the amount evaporated. Filter and wash the filter with sufficient water to yield 14 fluid ounces of filtrate, add the alcohol and again filter if necessary. This yields a reddish liquid of a slightly acid and not unpleasant ferruginous taste.

Solution of Chloral Compound.

Bromide of potash.....40 ounces.
Chloral hydrate crystals....40 ounces.
Fl. ext. cannabis ind..... 1 ounce.
Fl ext. hyoscyamus..... 1 ounce.
Simple elixir..... 2 pints.
Hot water..... 7 pints.
Chloroform water, q. s., to make ..... 10 pints.

Dissolve the bromide of potash and chloral hydrate in the hot water; mix the fluid extracts with the simple elixir, and add; make up to 10 pints with chloroform water. The latter is made by agitating 60 minims of chloroform with 25 ounces of distilled water in a gallon bottle. Shake vigorously until the chloroform is dissolved in the water. The water contains ½ per cent of chloroform.

Hydrangea, Lithiated.

Fluid ext. of Hydrangea. 2½ fl. ounces.
Tinct valerianate ammonia ..... ½ fl. ounce.
Benzoate of lithia.....256 grains.
Carbonate of lithia....128 grains.
Alcohol, 188 per cent.. 2 ounces.
Caramel ..... 1 dram.
Distilled water, q. s. to make up to..... 16 ounces.

Solution of Cocaine, Four Per Cent.

Cocaine .....73 grains.
Glycerine ..... ½ fl. ounce.
Water, distilled..... 3½ fl. ounces.

For methods and tables for percentage solutions, see same.

Solution of Magnesia Cit., Improved. Era.

Citric acid (crystals)..... 1 dram.
Sulphate of magnesia..... 1 ounce.
Simple syrup..... 3 fl. ounces.
Ext. of lemon.....10 drops.
Bicarb of potash (crystals) 2 scruples.
Water, q. s., to make.....12 fl. ounces.

Place the acid and epsom salts together in a 12-ounce citrate of magnesia bottle, and add simple syrup and extract of lemon; agitate for a moment and add the water, and lastly the bicarb of potash, and cork immediately.

Household Ammonia.

Hot water..... 1 gallon.
Sal. soda..... 2 pounds.
Aqua ammonia, 16..... 2 pints.

When the sal. soda is dissolved and the solution is cold, add the aqua ammonia.

Liquor Potassa.

Carbonate of potash..... 1 pound.
Slaked lime.....12 ounces.
Distilled water..... 1 gallon.

Dissolve the carbonate of potash in the water, and having heated the solution to the boiling point, in a clean iron vessel, gradually mix with it the slaked lime and continue the boiling for ten minutes with constant stirring; then remove the vessel from the fire; when cool, put into a large bottle and when settled down decant off into 1-pound glass stoppered bottles.

Fowler's Solution, New Method.

Carb. of potash.....37 grains.
Arsenious acid, powdered...37 grains.
Dilute alcohol..... 1 ounce.

Co. tincture of lavender..... 2 drams.
Water, distilled, q. s., to
make ..... 8 ounces.

Dissolve the carbonate of potash in two drams of the distilled water; add the arsenious acid in powder and dissolve. Mix the co. tincture of lavender with the dilute alcohol and five ounces of distilled water, and then add the solution of arsenic and potash; filter. Make up to 8 fluid ounces with distilled water.

Donovan's Solution.

Iodide of arsenic.....37 grains.
Iodide of mercury, red.....37 grains.
Distilled water, q. s., to
measure ..... 8 ounces.

Triturate the iodides with a half ounce of water until dissolved; filter, and pass enough water through the filter to make the solution measure 8 fluid ounces.

Gaduol with Rock and Rye.

Gaduol .....32 grains.
Alcohol ..... 1 ounce.
Rye whisky.....11 ounces.
Rock candy syrup..... 4 ounces.

Dissolve the gaduol in the alcohol and add to the rye whisky; then add the rock candy syrup.

Wine of Gaduol.

Gaduol .....32 grains.
Alcohol, 188 per cent..... 1 ounce.
Port wine.....13 ounces.
Simple elixir, red, q. s. to
make .....16 ounces.
Magnesia carbonate..... ¼ ounce.

Dissolve the gaduol in the alcohol and add to the carbonate of magnesia in a mortar; triturate well, slowly adding the wine; filter; and add simple elixir q. s. to measure 16 ounces.

Castor Oil Emulsion.

Castor oil..... 1 fl. ounce.
Powdered acacia..... 3 drams.
Oil bitter almonds..... 2 minims.
Oil cloves..... 1 minim.
Saccharin ..... 1 grain.
Water to make..... 4 fl. ounces.

Mix the oil with the gum in a dry mortar, add one-half fl. ounce of water at once, stirring until emulsion is formed. Then add the saccharin, previously dissolved in water by the aid of one-half grain sodium bicarbonate, and finally the remainder of the water.

CHLORODYNES AND ANODYNES.

Chandler's Chlorodyne.

Muriate of morphia..... 8 grains.
Fl. ext. of cannabis indica..30 minims.
Oil of peppermint.....10 drops.
Tincture of capsicum.....15 drops.
Chloroform ..... 2 drams.
Alcohol ..... 1 ounce.
Glycerine ..... 1 ounce.

Mix.

Dose: Ten to thirty drops in a wineglass of water.

Chlorodyne Clear.

Chloroform ..... 2 fl. ounces.
Ether .....½ fl. ounce.
Alcohol (95 per cent).... 7 fl. ounces.
Essence of peppermint... 6 fl. drams.
Tinct. of capsicum..... 6 fl. drams.
Tinct. cardamom comp... 2 fl. ounces.
Fl. ext. of licorice..... 2 fl. ounces.
Hydrocyanic acid, diluted. 1 fl. ounce.
Glycerine .....16 fl. ounces.
Sulphate of morphia.....40 grains.

Chlorodyne.

The following formula is from Baily's Physician's Pharmacopoeia:

Hydrochlorate of morphia.. 4 grains.
Chloroform .....48 minims.
Rectified ether.....32 minims.
Rectified spirit.....32 minims.
Dilute hydrocyanic acid....32 minims.
Tincture of Indian hemp...32 minims.
Tincture of capsicum.....24 minims.
Oil of peppermint, English. 3 minims.
Hydrochloric acid, pure.... 4 minims.
Powdered tragacanth..... 2 grains.
Molasses, dark green..... 3 drams.
Distilled water, to..... 1 ounce.

Dr. Brown's Chlorodyne.

Concentrated muriatic acid... 5 parts.
Ether .....10 parts.
Chloroform .....10 parts.
Tincture of cannabis indica (Indian hemp).....10 parts.
Tincture of capsicum.....10 parts.
Morphine ..... 2 parts.
Hydrocyanic acid..... 2 parts.
Oil of peppermint..... 1 part.
Simple syrup.....50 parts.
Tincture of hyoscyamus..... 3 parts.
Tincture of aconite..... 3 parts.

Chlorodyne.

Muriate of morphia.....64 grains.
Chloroform ..... 4 ounces.
Glycerine ..... 4 ounces.
Fl. ext. cannabis ind..... 4 ounces.
Hydrocyanic acid dil. U. S. 2 drams.
Oil of peppermint.....½ dram.
Tinct. of capsicum..... 6 drams.
Alcohol, 188 per cent to make up to.....16 fl. ounces.

Anaesthetic Solution.

Hydrochlorate cocaine.... 2 drams.
Chloral hydrate..... 1 dram.
Carbolic acid..... ½ dram.
Chloroform ..... ½ dram.
Glycerine ..... 3 ounces.
Water ..... 3 ounces.
Water for rinsing, filter... ½ ounce.

Mix the carbolic acid and glycerine.

Mix the chloral hydrate and the chloroform. Dissolve the cocaine in the water; mix all together and filter; after filtration has ceased, run half an ounce of distilled water through the filter. This solution contains 4 per cent of cocaine.

Anodyne for Dentists.

Cocaine .....40 grains.
Sulph. ether conc..... 1 ounce.
Oil of peppermint..... 1 ounce.

Dissolve the cocaine in the ether and add the oil of peppermint.

POWDERS.

Lithia and Potash Powders.

Potash bicarb. powd..... 1 dram.
Lithia carb., powd..... 2 grains.
For the blue paper.
Acid, citric, powd.....40 grains.
For the white paper.

Dissolve in separate tumblers filled one-third with cold water. Mix and drink while effervescing.

Sweet Seidlitz Powders.

Soda bicarb..... 480 grains.
Saccharin ..... 3 grains.
Rochelle salts.....1440 grains.

Mix thoroughly and divide into 12 powders; wrap in blue paper.

Tartaric acid, powd..... 420 grains.

Divide in 12 equal parts; wrap in white paper.

Caffeine Seidlitz Powders.

Soda bicarb..... 480 grains.
Rochelle salts.....1440 grains.

Mix and make 12 powders in blue paper.

Tartaric acid, powd..... 420 grains.
Citrate of caffeine, powd... 24 grains.

Mix and make 12 powders in white paper.

Neutralizing Cordial.

The following formula is given by Truscott:

Essence peppermint..... 2 drams.
Potassium bicarbonate..... 4 drams.
Fluid extract rhubarb..... 4 ounces.
Granulated sugar..... 8 ounces.
Soft water..... 2 pints.

Preston Salts.

Powdered chloride of ammonia ..... 1½ ounces.
Powdered carbonate of potassium ..... 1 ounce. 6 drams.
Powdered camphor..... 1 dram.
Coarsely powdered carbonate of ammonium..... 3 drams.
Oil of cloves.....10 drops.
Oil of bergamot.....10 drops.

Smelling Salts.

The Seifensieder Zeitung gives the following directions for preparing a superior article of smelling salt:

Ammonium carbonate.....120 grams.
Spirit of ammonia..... 60 grams.
Bergamot oil..... 12 drops.
Lavender oil..... 8 drops.
Oil of cloves..... 4 drops.
Neroli oil..... 4 drops.
Cinnamon oil..... 4 drops.

The ammonium carbonate, which should be quite fresh, and in lumps about the size of a hazelnut, is put into a wide-mouthed jar. The oils and ammonia are then mixed and poured into the jar and the stopper at once applied. Set aside for two days, at the end of which time the ingredients will be found to have united in a solid mass.

If it is desired to prevent this occurrence and have the substance in the shape of a dry salt, instead of letting the container remain quiet, shake it frequently and violently every day for a week. The salt thus obtained can be easily removed from the container, coarsely pulverized and put into little smelling bottles, should it be desirable so to do.

Monocarbonate of Ammonia for Smelling Salts.

Ammon. carb..... 2 pounds.
Liq. ammon. fort..... 1 pound.
Ol. bergam..... 1 dram.
Ol. lavand..... 2 drams.
Ol. myrist.....15 minims.
Ol. caryoph.....15 minims.
Ol. cinnam..... 1 dram.

Break the ammon. carb. into small pieces, and in a large Wedgewood mortar pour over it the liq. ammon. fort., with which previously mix the perfumes. Cover the mortar, and let stand for a few days to effect the conversion of the ammon. carb. to monocarbonate. Reduce to coarse powder, and keep closely stoppered.

Incense for Churches.

Benzoin ..... 3 ounces.
Storax ..... 3 ounces.
Olibanum ..... 4½ ounces.
Myrrh ..... 4½ ounces.
Cascarilla ..... 2½ ounces.
Oil of lavender.....20 minims.
Oil of bergamot.....20 minims.
Oil of cinnamon..... 8 minims.
Oil of cloves.....10 minims.

Mix well.

Patent Insect Powder.

Powdered white helebore... 1 pound.
Powdered borax..... 2 pounds.
Powdered angelica root..... 1 pound.
Insect powder true..... 6 pounds.

Bed Bug Poison.

Corrosive sublimate..... 8 ounces.
Distilled water..... 4 pints.
Salt ..... 8 ounces.
Sulphuric ether..... 1 ounce.
Mix.

Death on Rats.

Fine corn meal..... 2 parts.
White arsenic, powdered..... 2 parts.
Mix thoroughly and color to suit the trade, either with burnt umber, charcoal, ultramarine, or vermillion, q s.

Cockroach Powder.

Equal parts of powdered borax, Persian insect powder, and powdered colocynth, well mixed together and thrown about such spots as are infested with these troublesome insects will prove an effectual means of getting rid of the scourge if used persistently.—C. & D.

Fly Poison.

A strong solution of white arsenic (say 1 dram to the pint) sweetened with moist sugar, molasses or honey. Poison.

Fly Poison.

Molasses, honey or moist sugar, mixed with about one-twelfth their weight of King's yellow or orpiment.

Both the above are dangerous preparations, and should never be employed where there are children.

Fly Poison.

Quassi a-chips (small).. ¼ ounce.
Water ..... 1 pint.
Boil ten minutes, strain and
add Molasses..... 4 ounces.
Flies will drink this with avidity, and are soon destroyed by it.

Cockroach Exterminator.

Mix 3 pounds of oatmeal, or cornmeal, with a pound of white lead; add molasses to form a good paste, and put a portion down at night in the infested places. Repeat for a few nights alternately, and in the morning remove the paste and the corpses to a convenient place.

Vermin Killer, for Rats and Mice.

Sulphate of strychnia..... ½ ounce.
Powdered sugar..... 1 ounce.
Wheaten flour .....14½ ounces.
Oil of anise ..... ½ dram.
Solution of aniline..... q. s.
Drop the oil of anise on the flour and mix thoroughly with the other ingredients; spray with a solution of aniline of any color desired, before mixing.

Sticky Fly Paper Mixture.

Yellow resin ..... 2 pounds.
Boiled linseed oil..... 2 pounds.
Castor oil..... 1 pound.
Molasses .....¼ pound.
Beeswax .....⅛ pound.
Melt the resin and the beeswax in the oils by the heat from a water bath; whilst still hot mix in the molasses, and spread on sized parchment paper.

Sizing for Fly Paper.

Glue .....¼ pound.
Water .....¾ pound.
Dissolve the glue in the water by the heat of a water bath; and while

hot brush on to sheets of parchment paper; when the sizing has set on the paper, put on the sticky fly paper mixture (see preceding formula) with a varnish brush, using a metal edge to keep the margin of the paper free from the mixture.

Fly Paint.

Arsenic powdered..... 1 ounce.
Sal soda ..... 1 ounce.
Water ..... 8 ounces.
Glycerine ..... 8 ounces.

Dissolve the arsenic and sal soda in the water, using heat, when dissolved, filter and add the glycerine; mix well and apply with a brush to windows or other places infested with flies.

Phosphorus Paste, for Exterminating Rats, Mice, Roaches and Ants.

Carbon bisulphide ..... 1 pound.
Phosphorus .....¾ ounce.
Oil of anise.....½ ounce.
Terra alba .....24 ounces
Gluocose ..... 6 pints.

Dissolve the phosphorus in the carbon bi-sulphide, and add the oil of anise; set aside until needed; heat the gluocose to 150 degrees F., and stir in the terra alba when the temperature of the mixture has fallen to 100 degrees (and not sooner); add the solution of phosphorus and mix well into the paste with a wooden stirring stick until thoroughly incorporated. A wide porcelain dish is the most suitable vessel to use for mixing the paste. This paste will not ferment and will remain in good condition for a long time; when the oil of anise has been used for some time to perfume the paste with, a change may be made to oil of rhodium; or oil of fennel, alternating the odors, as may seem fit.

Mosquito Oil.

Oil of eucalyptus..... 1 ounce.
Oil of pennyroyal..... 1 ounce.
Sweet oil ..... 6 ounces.

Mix.

Anoint the hands and face with the oil.

Nursery Insecticide.

Ch. and Dr.

Vinegar of cantharides.....
or
Vinegar of stavesacre..... 3 drams.
Glycerin ..... 1 ounce.
Infusion of quassia (1 to 7)
enough to make..... 1 pint.

Fumigating Pastilles (Insecticide) A

Ch. and Dr.

Charcoal, in powder.....500 parts.
Saltpetre ..... 60 parts.
Carbolic acid ..... 40 parts.
Insect powder.....250 parts.

Make into a paste with tragacanth mucilage, and divide into suitable sized cones.

Fumigating Pastilles. B

Charcoal powder .....500 parts.
Saltpetre ..... 50 parts.
Insect powder .....150 parts.
Benzoin .....100 parts.
Tolu balsam .....100 parts.

Make as above.

Window-Polishing Paste.

Castile soap ..... 2 ounces.
Boiling water ..... 3 ounces.

Dissolve, and add the following in fine powder:

Precipitated chalk ..... 4 ounces.
French chalk ..... 3 ounces.
Tripoli ..... 2 ounces.

Mix, and reduce with water to the consistency desired.

Invisible Writing on Glass.

Glass written upon with French chalk shows the design only when breathed upon. The glass is written on with a French-chalk pencil, cleansed with a handkerchief.

Capsules for Bottles (Gelatine).

Soak

White glue ..... 7 pounds.
Glycerine .....10 ounces.
Water .....60 ounces.

Heat over a water-bath and add any desired color. Pigments may be used, and very beautiful tints obtained by the use of aniline colors. Store the substance in jars.

Modus operandi.—Liquify the mass and dip the cork and portion of neck of bottle into the liquid; it sets very quickly.

This capping is particularly applicable for varnishes, benzine, liquid glue, glycerine jelly, and other little odds and ends which we wish to make attractive on the shop counter, and it is at the same time a most "hermetical seal."

Cement for Fastening Metal, Letters on Glass, Marble, Wood, Etc.

Copal or lac varnish.....15 parts.
Drying oil ..... 5 parts.
India rubber or gutta percha ..... 4 parts.
Coal oil ..... 7 parts.
Roman cement ..... 5 parts.
Plaster ..... 5 parts.
Copal or rosin varnish.....15 parts.
Turpentine ..... 2½ parts.
Essence Turpentine ..... 2½ parts.
Fish isinglass (in powder).. 2 parts.
Iron filings ..... 3 parts.
Ocher or rotten stone.....10 parts.

These cements are much used for fixing metallic letters to glass, marble or wood. The two following are particularly good for uniting brass and glass.

Caustic soda ..... 1 part.
Rosin ..... 3 parts.
Plaster ..... 3 parts.
Water ..... 5 parts.

The whole is boiled. This compound hardens at the end of half an hour; the hardening may be retarded by replacing the plaster by zinc white, white lead, or slaked lime.

Fine litharge ..... 2 parts.
White lead ..... 1 part.
Copal ..... 1 part.
Boiled linseed oil..... 3 parts.

The whole is triturated together. Dissolve by heat.

For joining metallic surfaces where soldering is inconvenient, recourse may be had to a composition formed in the following way: Pure and finely divided copper, such as that obtained by the reduction of sulphate of copper with zinc clippings, 20 to 36 parts, according to the degree of hardness desired in the cement, dissolved in a sufficient quantity of sulphuric acid to make a thick paste; with this is incorporated, by trituration in a mortar, mercury 70 parts. The mass is soft, but hardens at the end of some hours. For use it is heated to 212 degrees F. (100 degrees C.), and powdered in an iron mortar heated to 302 degrees F. (150 degrees C.); it then assumes the consistence of wax, and is harder in proportion, as it contains more copper.

Cement for Metal.

Metal, Cement for.—Melt over a water bath.

Copal varnish .....30 parts.
Drying oil .....10 parts.
Turpentine ..... 6 parts.

When melted add

Slaked lime .....20 parts.

Cement for Metal and Rubber.

Metal and Rubber, Cement for.—Powdered shellac is softened in ten times its weight of strong water of ammonia, whereby a transparent mass is obtained, which becomes fluid after keeping some little time without the use of hot water. In three or four weeks the mixture is perfectly liquid, and when applied, it will be found to soften the rubber. As soon as the ammonia evaporates the rubber hardens again—it is said, quite firmly—and thus becomes impervious both to gases and to liquids. For cementing sheet rubber, or rubber material in any shape, to metal, glass, and other smooth surfaces, the cement is highly recommended.

To Cement Thin Metal Sheets.

Dissolve isinglass, cut fine, in warm water, and add a little nitric acid. If more acid is used than is necessary the cement will not dry.

Linseed Oil Cement for Metal.

Metal, Linseed Oil Cement for.—Linseed oil and well slaked lime are made into a paste. Great pressure must be used.

Metal to Porcelain, Glass, Etc.

Metal to Porcelain, Glass, etc.—Dissolve good glue in water, heat and add one-half as much linseed and varnish and one-quarter as much Venice turpentine as the amount of glue used.

Cement for Mica.

Mica, Cement for.—A colorless cement for joining sheets of mica is prepared as follows: Clear gelatine is softened by soaking it in a little cold water, and the excess of water is pressed out by gently squeezing it in a cloth. It is then heated over a water bath until it begins to melt, and just enough hot proof spirit (not in excess) stirred in to make it fluid. To each pint of this solution is gradually added, while stirring, one-quarter ounce of gum ammoniac and one and one-third ounces of gum mastic previously dissolved in 4 ounces of rectified spirit. It must be warmed to liquefy it for use and kept in stoppered bottles when not required. This cement, when properly prepared, resists cold water.

Microscope Cement.

Microscope Cement.—Put into a bottle

Isinglass ..... 2 parts.
Gum arabic ..... 1 part.

Cover them with proof spirit, cork the bottle loosely, and place it in a vessel of water, and boil it till a thorough solution is effected, when it must be strained for use. This is a highly valuable cement for many purposes, and is used for mounting opaque objects for the microscope.

Minerals, Fossils, Etc. A

Use best fish glue (hot) and tie well.

Minerals, Fossils, Etc. B

Starch ..... ¼ ounce.
White sugar ..... 1 ounce.
Gum arabic ..... ¼ ounce.

Dissolve the gum in a little hot water, and the sugar and starch, and boil until the starch is cooked.

Mohr's.

Mohr's.—Equal parts of pulverized brick and litharge are made into a paste with linseed oil. After application a little fine sand is dusted over the lute, and it is dried in the oven.

GLUES.

Sci. Am. Cyclo.

Glue is a cement used for joining pieces of wood together and has for its chief constituent a substance called gelatine, obtained from the cuttings of hides, skins, tendons and other refuse parts of animals, as well as from cuttings of leather and parchment, which, after being well soaked in milk of lime, to dissolve any blood, flesh or fat, are thoroughly washed in a stream of water to remove the lime. The material is then boiled in water until the required adhesive strength is obtained, when the liquid is run off into a cistern and clarified with powdered alum, which precipitates in the form of sulphate any lime that may remain, as well as other impurities. Before cooling it is drawn off into moulds, and is then in the form of size, which, when cut into slices and dried in the air, hardens into glue.

Hints About Glue.

Hints about Glue.—Good glue should be a light brown color, semi-transparent, and free from waves or cloudy lines. Glue loses much of its strength by frequent remelting; therefore, glue which is newly made is preferable to that which has been reboiled. The hotter the glue the more force it will exert in keeping the joined parts glued together. In all large and long joints it should be applied immediately after boiling. Apply pressure until it is set or hardened.

The following, translated from Des Ingenieurs Taschenbuch, contains a great deal of valuable information which will probably be acceptable to many of our readers.

Common Glue. — The absolute strength of a well glued joint is:

	Pounds per square inch. Across the grain, end to end.	With the grain.
Beech	2,133	1,095
Elm	1,436	1,124
Oak	1,735	568
White wood ..	1,493	341
Maple	1,422	896

It is customary to use from one-sixth to one-tenth of the above values, to calculate the resistance which surfaces joined with glue can permanently sustain with safety.

Bank Note or Mouth Glue.

Bank Note or Mouth Glue.—Is made by dissolving 1 pound of fine glue or gelatine in water, evaporating it till most of the water is expelled; adding one-half pound brown sugar, and pouring it into moulds. Some add a little lemon juice. It is also made with 2 parts of dextrine, 2 of water and 1 of spirit.

Bookbinders' Glue.

Bookbinders' Glue.—Use best carpenters' or white glue, to which, after soaking and heating, one-twentieth its weight of glycerine is added.

Glue of Caseine.

Glue or Caseine.—1. (Braconnet.)—Dissolve caseine in a strong solution of bicarbonate of soda. 2. (Wagner.)—Dissolve caseine in a cold saturated solution of borax. Superior to gum, and takes the place of glue in many cases May be used for backs of adhesive tickets.

To Make Compound Glue.

Compound Glue, to Make.—Take very fine flour, mix it with white of

eggs, isinglass and a little yeast; mingle the materials and beat them well together; spread them, the batter being made thin with gum water, on even tin plates and dry them in a stove, then cut them out for use. To color them tinge the paste with Brazil or vermilion for red; indigo or verditer, etc., for blue; saffron, turmeric or gamboge, etc., for yellow.

China Cement.

Isinglass ..... 1 ounce.
Mastich (in powder)..... 4 scruples.
Water ..... 2 ounces.
Glacial acetic acid.....4 ounces.

Soak the isinglass in the water, and when all has been absorbed, add the acid previously mixed with the mastich. Heat gently till a clear solution is formed.

Liquid Glue.

Chloral hydrate ..... 2½ ounces.
Gelatine ..... 4 ounces
Water .....10 ounces

Mix all together.

The solution is ready in forty-eight hours, and is said to be excellent for mounting photographs.

Cement for Porcelain Letters.

Boiled linseed oil..... 3 ounces.
Litharge ..... 2 ounces.
White lead ..... 1 ounce.
Gum copal ..... 1 ounce.

Free the surface from grease before applying.

Waterproof Glue for Wood.

Glue .....12 parts.
Water. .....enough.

Soak the glue in water and liquefy by means of a water bath, then add:
Resin ..... 3 parts.

And when this is melted add
Turpentine ..... 4 parts.

To mend broken mortars or pestles, use a thick paste of either calomel or litharge with glycerine. It forms an excellent cement, although rather long in drying.

Mucilage Stick.

Glue ..... 5 ounces.
Granulated sugar..... 1 ounce.
Water ..... 5 ounces.

Dissolve by the heat of a water bath; pour into molds and dry.

Acacia Mucilage.

Gum acacia granld..... 16 ounces.
Water .....32 ounces.
Glycerine ..... 2 ounces.
Salicylic acid.....40 grains.

Dissolve the gum in the water by the aid of heat; dissolve the salicylic acid in the glycerine and add.

Butter Coloring.

Sal soda..... 2 pounds.
Carbonate of potash..... 2 pounds.
Cold water ..... 5 gallons.

Dissolve the soda and potash in the water and set aside.

Annatto ..... 2 pounds.
Cold water ..... 4 gallons.

Let stand one day stirring thoroughly meantime.

Mix the two preparations together; let stand for a week, stirring occasionally; use clear water and stone crocks for mixing purposes.

Directions: Use one teaspoonful of the coloring in 5 quarts of cream; add just before churning.

Infants' Food.

Best wheaten flour.....24 ounces.
Fine oatmeal .....12 ounces.

Fine lentil flour..... 6 ounces.
Powdered sugar of milk.... 6 ounces.

Mix well in a mortar, pass through a sieve; place in a large dish and bake in a slow oven for two hours; when cool pass through a sieve and pack in air tight packages.

Directions: Mix one tablespoonful of the food with water or milk into a paste, then add half a pint of boiling milk (or milk and water according to age of child), and boil for a few minutes; if not sufficiently sweet add sugar to suit taste.

Crimson Marking Ink for Linen.

Nitrate of silver crystals.... 1 ounce.
Carmine .....10 grains.
Distilled water.....10 ounces.
Acacia mucilage..... 4 ounces.
Aqua ammon. q. s.

Dissolve the silver in the water and add ammonia water until the precipitate first formed is dissolved (shake the solution after each portion of the ammonia water is added); then add the carmine in fine powder; and lastly add the mucilage; mix well. Write on the linen (tightly stretched) with a gold pen and pass a hot iron over the writing.

Violet Stamp Ink.

Methyl violet 3B..... 3 drams.
Distilled water.....10 drams.
Dilute acetic acid.....10 drams.
Rectified spirit..... 1½ ounces.
Glycerine ..... 7 ounces

Triturate the violet in a mortar with the water, add the glycerine gradually, then the acid and spirit.

Cheap Blue-Black Ink.

Tannin ..... 1 ounce.
Sulphate of iron..... 6½ drams.
Sulphuric acid.....20 minims.
Methyl blue..... 1 scruple.
Spirit ..... ½ ounce.
Water .....25 ounces.

Dissolve the tannin in half of the water, and the sulphate of iron and acid in the rest. Dissolve the methyl blue in the spirit, and add to the iron solution; then add the tannin solution.

Aniline Copying Ink.

The following is adapted for use without a press:

Nigrosin ..... 1 ounce.
Hot water..... 1 ounce.
Glycerine ..... 1 ounce.
Glucose ..... 1½ drams.

Rub all these together, and dilute with as much water as will give the ink the necessary character—i. e., about 10 ounces.

Ink Powder.

Tannin ..... 1 ounce.
Dried sulphate of iron.. 2½ drams.
Powdered gum arabic... 4 scruples.
Sugar ..... 2 scruples.
Aniline blue, B..... 2 scruples.

Mix.

Washing Powder Compound.

Sal. soda, dried..... 4 ounces.
Muriate of ammonia, powd.. 4 ounces.
Soda ash..... 4 pounds.

The ingredients should be well dried before mixing.

Directions: Put the clothes to soak over night in clear water. Then put the boiler on the stove half full of cold water and dissolve one tablespoonful of compound in a little water and add to the boiler. Stir well. Now put in the clothes and boil twenty minutes, then take them out and rut lightly and rinse and hang out to dry, and you will be surprised to see how much labor is saved. Will not injure the clothes. It saves one-half the labor. Try it, &c.

Wash Bluing.

Ferrocyanuret of iron.... 6 ounces.
Oxalic acid..... 1½ ounces.
Boiling water..... 2 gallons.

Dissolve the iron and acid in a quart of the water, and add the remaining 1¾ gallons. This makes a good article of bluing.

Indigo Wash Bluing.

Best bengal indigo..... 5 pounds
Strong sulphuric acid.....30 pounds

After 5 days, place mixture in a tul and pour on 40 gallons boiling water.

Bluing for Laundry Use.

Sci. Am. Cyclo.

1. Dissolve indigo sulphate in cold water and filter.

2. Dissolve good cotton blue (aniline blue 6 B) in cold water.

3. Dissolve fine Prussian or Berlin blue with ⅛ part of oxalic acid in water; or use ferrocyanide of potassium (1-12 part) in place of oxalic acid.

4. Dissolve 7 oz. of yellow prussiate of potash in 2.1 pints of water. Make a solution of sesquichloride of iron which shall contain 1 part of the solid salt by weight to every 10 parts of water by weight. Take equal volumes of the two solutions, and add to each twice its volume of cold concentrated solution of sulphate of soda. Finally, mix the two solutions thus obtained. The solid Prussian blue will immediately precipitate. This may be put upon a filter and washed, being kept exposed to the air for perhaps fifteen or twenty days. The excess of soluble salts will first be washed away and then the latter washings will dissolve the blue, forming a deep-blue liquid, which may be used for preparations of bluing for clothing. It is however, better to buy the soft Prussian blue than to attempt to prepare it on a small scale. 1 oz. of the soft Prussian blue powdered, and put into a bottle with 1 qt. of clear rain water, acidulated by ¼ of an oz. of oxalic acid, is a good preparation. A very small portion suffices for a large amount of clothing.

A Disinfective Laundry Blue.

Mix together 16 parts of Prussian blue, 2 parts of carbolic acid, 1 part of borax, and 1 part of gum arabic into a stiff dough. Roll it out into balls as large as hazel nuts, and coat them with gelatine or gum to prevent the carbolic acid from escaping.

A Liquid Washing Blue.

Water 15 parts; dissolve in this 1½ parts indigo-carmine. Add ¾ part gum arabic.

Silverine.

We have found the following silver-cleaning preparation excellent:

Precipitated chalk..... 1 ounce.
Solution of ammonia..... 1 ounce.
Wood alcohol..... 1½ ounces.
Water to.....10 ounces.

Mix:

The following label is a suitable one:

SILVERINE.

A New Preparation.

For cleansing and restoring Gold, Silver, Gilt, Plated or Parcel-gilt Jewelry, Electro or Nickel-plated Wares, Polished Brass, &c., &c.

WARRANTED FREE FROM MERCURY.

Instructions for Use.—Well shake up, and use on a piece of cotton wool, sponge, or soft cloth; then rub off per-

fectly dry with wool, soft leather, or cloth. If for fancy work, apply as above and lightly polish off with a soft cloth. For gold, gilt, and brass articles, dilute to half strength by adding water.

To be kept tightly corked when not in use.

TO CLEAN BRASS.

The Government method prescribed for cleaning brass, and in use at all the United States arsenals, is claimed to be the best in the world. The plan is to make a mixture of 1 part common nitric acid and one-half part sulphuric acid, in a stone jar, having also ready a pail of fresh water and a box of sawdust. The articles to be treated are dipped into the acid, then removed into the water, and finally rubbed with sawdust. This immediately changes them to a brilliant color. If the brass has become greasy, it is first dipped in a strong solution of potash and soda in warm water; this cuts the grease, so that the acid has free power to act.

Brass Paste. A

Rotten stone	2	pounds.
Soft soap	1	pound.
Oil of amber	1	ounce.

Brass Paste. B

Oxalic acid	2	ounces.
Soft soap	½	pound.
Sweet oil	½	pound.
Turpentine	1	ounce.
Rotten stone	4½	pounds.
Boiling water	16	ounces.

Dissolve the acid in the water, add the rotten stone, and, finally, the other ingredients.

Gilding Powder.

For gilding such metals as copper and silver the following powder is said by Martin to give good results:

Gold chloride	20 parts.
Potassium cyanide	60 parts.
Cream of tartar	5 parts.
Precipitated chalk	100 parts.

Before using, the powder is to be mixed with 100 parts of water, and rubbed upon the metal with a pad of cotton-wool.

Lacquers Not Requiring Heat for Metals.

A

Shellac	5 ounces.
Gamboge	5 drams.
Acetone	30 ounces
Alcohol	3 pints.

B

Shellac	1 ounce.
Dragon's blood	1 dram.
Annatto	1 dram.
Saffron	4 drams.
Gamboge	2 ounces
Sandarac	1 ounce.
Alcohol	2 pints.

C

Shellac	2 ounces
Dragon's blood	1 dram.
Annatto	8 drams.
Turmeric	4 ounces
Sandarac	8 ounces
Alcohol	2 pints.

These give: A, pale yellow; B fine pale; C, pale gold. Cold lacquers are like the cold-water starches—it greatly depends upon the directions for success in their use. The lacquering-room must be sufficiently warm to ensure absence of moisture from the surface of the metal, and to prevent blistering and scaling off of the varnish. Cold lacquers require at least two days before they are sufficiently hard; longer should be given if possible.

D

Gold, green, and light blue. The following is a good basis. Use aniline

colors; for gold, turmeric or gamboge.

Turpentine	8 ounces.
Linseed oil (boiled)	4 ounces.
Fused amber	4 ounces.
Shellac	1 ounce.

Dissolve with heat.

Brass Paste. C

Rotten stone in finest powder	4 ounces.
Oxalic acid	1 ounce.
Sweet oil	1½ ounces.
Turpentine	q. s. to make a paste.

Coloring matter may be added if desired.

Silver Plating Paste.

Nitrate of silver	½ ounce.
Common salt	½ ounce.
Cyanide of potassium	1 ounce.
Chalk	a sufficiency.

Dissolve the silver nitrate in a pint of water, and add the salt-dissolved in as much water. Mix the solutions, and collect the precipitate on a piece of cotton cloth. Transfer the moist precipitate to a mortar containing the cyanide (in powder), and dissolve by adding more water if necessary; then make the solution into a spreadable paste with prepared chalk.

To silver any tarnished article spread some of the paste upon the spot, and leave for a few hours; then brush it off. Repeat if necessary. The result is not so good as by electrodeposition, but home-made things are never so good as those produced by experts.

Polishing Paste for Brass. D

Tripoli	1 pound.
Spanish whiting	1 pound.
Pumice (finest powder)	½ pound.
Oleic acid	4 ounces.
Petrolatum	q. s. to make a soft paste.

The oleic acid and petrolatum to be the crude commercial articles.

The red polishing-paste for metals is made according to the following formula:

Peroxide of iron	6 ounces.
Kieselguhr	1 ounce.
Paraffin oil	1½ ounces.

The powders are to be in as fine a state of division as possible. Mix them, add the paraffin oil, then make into a paste with equal parts of lard and crude vaseline, and perfume with oil of mirbane.

Good Silvering Solution.

Cyanide of potassium	2 ounces.
Nitrate of silver	q. s. or 1 oz.
Distilled water	12 ounces.
Precipitated chalk	2 ounces.

Dissolve the cyanide in the water and add to it a concentrated solution of nitrate silver as long as the precipitate found at first is redissolved, and lastly mix in the chalk.

This liquid is applied with a soft bit of linen. The piece when silvered is well washed with water and the surface dried and gently polished with chamois skin.

For gilding substitute chloride of gold for nitrate of silver.

Stove Blacking.

(Sci. Am. Cyclo.)

Mix 2 parts of black lead, 4 parts of copperas, and 2 parts of bone black, with water, so as to form a creamy paste. This is an excellent polish, as the copperas produces a jet black enamel, causing the black lead to adhere to the iron.

Plumbago, 2 lb.; water, 8 oz.; turpentine, 8 oz.; sugar, 2 oz. Knead thoroughly and keep in tin boxes. Apply with a brush.

Plumbago, make into a thin paste with sodium silicate or water glass. This makes an excellent stove polish and should be brushed thoroughly.

Pulverized black lead, 2 lb.; spirits of turpentine, 2 gal.; water, 2 oz.; sugar, 2 oz. Mix.

Mix 5 parts black lead, 5 parts bone black and 10 parts of iron sulphate. Use water q. s. to form a paste. This is an excellent preparation and the coating is very permanent.

Reduce graphite to an impalpable powder by grinding in a mill with water, dry; use with water first, then dry and polish. This is the base of nearly all commercial stove polishes.

Turpentine and black varnish, put with any good stove polish, is the blacking used by hardware dealers for polishing heating stoves. If properly put on, it will last throughout the season.

Paste Stove Polish.

Pulverized black lead, 2 lb.; spirits of turpentine, 2 gal.; water, 2 oz.; sugar, 2 oz.; mix.

Liquid Stove Polish.

Bone black, 2½ parts; pulverized graphite, 2½ parts; copperas, 5 parts, water, q. s. to form a creamy paste.

Liquid Black Lead Polish.

Pulverized black lead, 1½ lb.; turpentine, 1½ gill; water, 1½ gill; sugar, 1½ oz.

Bone Black Polish.

Mix 2 parts copperas, 1 part powdered bone black, and 1 part black lead with enough water to give proper consistency, like thick cream. Two applications are to be recommended.

Brunswick Black for Grates, Etc.

Asphaltum, 5 lb.; melt and add boiled oil, 2 lb.; spirits of turpentine, 1 gal.; mix.

Paste Black Lead for Stoves.

Black lead in powder...20 ounces.
Treacle ..... 1 ounce.
Water ..... a sufficiency.

Make into a paste, and perfume if desired with a drop or two of oil of mirbane.

Artistic Enamel Black.

Asphaltum	8	ounces.
Black resin	4	ounces.
Sugar of lead (powdered)	¾	ounce.
Drop black (powdered)..	¾	ounce.
Oil of cassia.....	½	ounce.
Boiled linseed oil.....	4	ounces.
Turpentine	32	ounces.

Powder the asphaltum and resin; place in an iron saucepan with the sugar of lead; drop black and linseed oil and apply heat until liquefied. Withdraw from heat and gradually add the turpentine; stirring well; then add the oil of cassia and mix well. Keep the bottles well corked.

Paste Blacking for Shoes.

Ivory-black	16	ounces.
Lamp-black	16	ounces.
Treacle	16	ounces.
Sperm oil.....	4	ounces.
Vinegar	5	ounces.
Mix and add gradually		
Sulphuric acid.....	4	ounces.
When action ceases add		
Sulphate of iron.....	½	ounce.
Gum arabic.....	6	drams.
Hot water.....	5	ounces.

Previously mixed to form a solution. Work well until the paste is brought to a proper consistency.

Brown Leather Paste Dressing.

Oil of turpentine..... 3 ounces.
Dara-yellow wax..... 1 ounce.
Palm oil..... 1 ounce.
Oil of mirbane..... 15 minims.

Make a paste sec. art. If not of the right shade add a few drops of solution of tincture of catechu.

Brown Shoe Polish Paste. A

Yellow wax..... 4 ounces.
Spirit of turpentine..... 8 ounces.

Melt on a water-bath, strain, stir occasionally until the paste turns creamy, then add

Nankin brown..... 15 grains.
Phosphine ..... 5 grains.
Water ..... ½ ounce.

previously dissolved. Stir constantly until the mixture is perfect.

Polish. B

Yellow wax..... 6 ounces.
Linseed oil..... 10 ounces.
Spirit of turpentine..... 30 ounces.

Dissolve by means of a water-bath in a closed vessel, and add

Primrose soap..... 4 ounces.

previously dissolved in

Water ..... 2 pints.

Stir continually till cold. Then with each 1 oz. of cream mix thoroughly

Nankin brown..... 5 grains.

dissolved in

Rectified spirits..... ½ dram.

The resulting polish is applied to leather with a rag, allowed to dry, and then lightly polished with a soft duster.

Liquid Shoe Polish, Like Brown's.

Water ..... 576 ounces.
Solid ext. of logwood... 4 ounces.
Bichromate of potash... 2 ounces.
Prussiate of potash.... ¼ ounce.
Lump borax..... 28 ounces.
Gum shellac..... 72 ounces.
Ammonia water..... 16 ounces.

Dissolve the logwood in the water by the aid of direct heat; when the logwood is dissolved, add the bichromate and prussiate of potash, then the lump borax. When the borax is dissolved and the solution is at the boiling point, add the shellac, a portion at a time, stirring constantly until the latter is dissolved; add the ammonia and continue the boiling until the smell of the ammonia has disappeared. When cold strain through cheese cloth.

Furniture Polish.

Acid acetic..... 1 ounce.
Raw linseed oil..... 1 ounce.
Alcohol, 188 per cent..... 2 ounces.
Turpentine ..... 2 ounces.

Shake well before using.

The polish may be colored, if desired, by adding a little aniline brown. If made in large quantities keep well stirred while bottling.

Mahogany Stain.

Dragon's blood..... 8 ounces.
Benzine ..... 6 pints.

Dissolve.

Patent Knot Filler.

Powdered shellac.....2 pounds.
Benzine .....6 pints.

Dissolve.

French Polish.

Shellac ..... 2 ounces.
Gum sandrac..... 2 drams.
Gum benzoin..... 2 drams.
Naptha, rect..... ½ pint.

Furniture Cream. A

Ch. and Dr.

Castile soap..... 1 ounce.
Yellow wax..... 1 pound.

White wax..... 1 ounce.
Turpentine ..... 2 pints.
Boiling water..... 2 pints.

Melt the waxes on a water-bath and add turpentine, stirring until the mixture is quite liquid. Separately dissolve the soap in the boiling water, and pour the two mixtures simultaneously into a hot earthenware jug or jar. Stir for five minutes, and pour into wide-mouthed bottles for sale.

Furniture Cream. B

Pearlash ..... 2 ounces.
Soft soap..... 4 ounces.
Pure yellow wax.....12 ounces.
Water .....20 ounces.

Boil together until a uniform cream is obtained, adding a little more water from time to time, and stirring all the while; then transfer to a 2-gallon jar containing 2 pints of warm water. Cautiously add with shaking 30 oz. of oil of turpentine, and enough water to make 1 gallon.

Furniture Paste.

Yellow wax..... 8 ounces.
Resin ..... 2 ounces.
Turpentine .....16 ounces.
Alkanet ..... 1 ounce.

Put the wax and resin in a 2-lb. or 3-lb. covered jar, and put the jar in a pan of water (with a layer of tow at the bottom). Heat until the wax and resin are melted; add the alkanet, and simmer for an hour or more. Then remove from the fire, add the turpentine, with constant stirring, and strain.

Should the mixture not be hot enough for straining, heat carefully on the water-bath again.

Taylor's Solution of Four Chlorides, Disinfectant.

H. S. Taylor (Era Prize).

Alum .....10 ounces.
Sal soda.....10 ounces.
Sal ammoniac..... 2 ounces.
Common salt..... 2 ounces.
Chlor. zinc..... 1 ounce.
Muriatic acid, com'l..... q. s.
Water ..... q. s. to 1 gal.

Dissolve the alum in one-half gallon of boiling water; then add the sal soda, which gives a precipitate of aluminum hydrate; muriatic acid is then added in sufficient quantity to dissolve this precipitate, thereby forming aluminum chloride. The other salts are then dissolved in the remainder of the water and added to the first solution.

The advantages claimed for this preparation are cheapness, ease of preparation, odorless, non-poisonous, and its adaptability for general use. Its freedom from iron in the disinfection of clothing is an important point in so much that it will not injure the fabric in any way. It commends itself for the disinfection of rooms by saturating a sheet with the diluted solution and hanging up in any convenient place. This diluted solution may be made by mixing one pint of the concentrated solution with 1 gallon of water.

Salicylic Acid Preservative Powder.

For meat use water containing 5 grains in the pint; add 5 grains to the pint of milk; for preserved fruits add 3 or 4 grains to 1 lb., and cover with parchment paper steeped in a solution of the acid containing about 20 grains to the pint.

Meat Preservative Powder.

The following is one of the most used:

Nitrate of potash.....15.5 parts.
Chloride of sodium.....73.5 parts.
Boric acid..... 9.5 parts.

Lemon Sugar.

Granulated sugar.....12 pounds.
Tartaric acid (powdered)...12 ounces.

Mix well and put into 12-ounce cans; put a half an ounce vial of soluble essence of lemon into each can.

Directions: Dissolve 3 or 4 teaspoonfuls of the lemon sugar in a tumblerful of cold water; add a few drops of the essence of lemon and mix well.

Custard Powder.

Gum tragacanth (powdered) 2 ounces.
Powdered starch..... 1 pound.
Powdered turmeric.....150 grains.
Oil of bitter almonds (sine poison) ..... 30 minims.
Essence of lemon..... 1 dram.

Put up in 1-ounce packages for 1 pint of milk.

Directions: One packet to be rubbed in a dish with 2 tablespoonfuls of milk; boil the remainder of the milk with 2 ounces of sugar and while boiling pour gradually into the dish, stirring briskly. Bake as a custard.

Curry Powder.

Powdered cardamom..... 1 ounce.
Powdered curcuma..... 1 ounce.
Powdered capsicum..... 1 ounce.
Powdered fenugreek..... 4 ounces.
Powdered ginger..... 1 ounce.
Powdered coriander..... 1 ounce.

Mixed Spices. A

Powdered turmeric..... 1 ounce.
Powdered liquorice..... 1 ounce.
Powdered coriander..... ½ ounce.
Powdered caraway..... 2 drams.
Powdered fenugreek..... 1 dram.
Powdered anise..... 1 dram.
Caraways ..... 2 drams.

Mix.

Mixed Spices. B

Powdered ginger..... 1 ounce.
Powdered nutmegs..... ¼ ounce.
Powdered mace..... ¼ ounce.
Powdered cloves..... ½ ounce.
Powdered cinnamon..... 1 ounce.
Powdered allspice..... 1 ounce.

Mix.

Pickle Spice.

Black pepper..... 1 pound.
White pepper..... ½ pound.
Ginger ..... ½ pound.
Mustard seeds..... ½ pound.
Capsicum ..... 2 ounces.

Tomato Catsup. A

Tomato pulp.....20 gallons.
Vinegar ..... 2 gallons.
Salt ..... 4½ pints.
Cloves (powdered)..... ½ pound.
Allspice (powdered)..... ½ pound.
Black pepper (powdered). ¼ pound.
Red pepper (powdered).. 1 ounce.

Mix.

Tomato Catsup. B

Bruised tomatoes..... 1 gallon.
Common salt..... 8 ounces.

Stand for three or four days. Squeeze out the juice, and to every one-half gallon add black pepper 1 ounce. Boil half an hour, strain and add

Allspice ..... ½ ounce.
Ginger ..... ½ ounce.
Mace ..... ½ ounce.
Cochineal ..... ¼ ounce.

Simmer gently half an hour, strain, cool, and bottle. A little brandy may be added, and shallots, if the flavor be liked, may be boiled along with the black pepper.

Scotch Marmalade.

Seville orange juice..... 2 pints.
Seville orange peel cut small 2 pounds
Yellow sugar..... 2 pounds

Ccok to proper consistency.

Universal Seasoning.

Salt	½ pound
Mace	½ ounce
White pepper	1 ounce
Cloves	½ ounce
Cayenne	2 drams
Nutmegs	1 dram.

Celery Salt.

Salt (finely powdered)	8 ounces
Starch (powdered)	1 ounce.
Celery seed (powdered)	2 ounces

Mix.

Brown Gravy Salt.

Salt (finely powdered)	8 ounces
Granl'd sugar	4 ounces
Cayenne (powdered)	10 grains.

Mix and fry in a frying pan until brown; rub through a sieve whilst hot

Kitchener's Soup Herb Powder.

Dried parsley	2 ounces
Winter savory	2 ounces.
Sweet marjoram	2 ounces.
Lemon thyme	2 ounces.

Sausage Flavor. A

Sage	½ pound.
Pepper	1 pound.
Allspice	1 pound.

Sausage Flavor. B

Sage	1 pound.
Marjoram	1 pound.
Thyme	1 pound.
Pepper	1 pound.
Ground nutmeg	1 ounce.

Mix.

Sausage Flavor. C

Allspice	1 pound.
Cloves	¼ pound.
White pepper	¼ pound.
Sage	½ pound.

Mix.

Ham Sausage Seasoning.

Cardamom (powdered)	1 dram.
Mace	½ dram.
White pepper	2 ounces.
Salt	4 ounces.
Coriander	½ ounce.

Mixed.

Savory Spices.

Powdered white pepper	8 ounces.
Powdered mace	1 ounce.
Powdered cloves	2 ounces.
Powdered allspice	2 ounces.
Powdered cardamom	¼ ounce.

Pork Flavoring.

Sage (powdered)	4 ounces.
Marjoram	1 ounce.
White pepper	2 ounces.
Ginger (powdered)	¼ ounce.
Cayenne (powdered)	⅛ ounce.

Croft's Fine Table Sauce.

Vinegar	50 gallons.
Tamarinds	40 pounds.
Anchovies (ground)	6 pounds.
Cayenne pepper	3 pounds.
Onions (ground)	12 pounds.
Garlic (ground)	2 pounds
Cloves (ground)	3 pounds
Nutmegs (ground)	½ pound.
Mace (ground)	1 pound.
Salt	14 pounds.
Salicylic acid	1 ounce.
Canton soy	4 gallons.
Brown N. O. Sugar	25 pounds.

Put the vinegar in an 80-gallon cask (having a wide bung hole); add the tamarinds, sugar, salt and spices; grind the fish, onions and garlic in a cider mill and add—let stand (with occasional agitation) for two months; strain through hair cloth sieve and add the acids and soy; mix well. If color is not dark enough add burnt sugar coloring; stir well when bot tling. In making this sauce a com

bination cider mill with press will be found useful for grinding the materials and pressing the marc. For making small quantities bruise the materials in an iron mortar.

Delmonico Sauce, Cheap.

Vinegar	50	gallons
Cayenne pepper	4	pounds.
Onions (ground)	8	pounds
Garlic (ground)	2	pounds.
Tamarinds	20	pounds.
Cloves (ground)	3	pounds.
Nutmegs (ground)	1	pound.
Crude pyroligneous acid	1	pint.
Salicylic acid	1	ounce.
Salt	14	pounds.
Brown N. O. sugar	25	pounds.
Canton soy	4	gallons.
Burnt sugar coloring	½	gallon.

Put the pressed marc from the Croft's sauce into an 80-gallon cask with the vinegar and proceed according to directions in preceding formula for making Croft's sauce.

Sugar house molasses may be substituted for canton soy by adding an additional 2 pounds of salt for each gallon of molasses used; but the flavor is not so good. When bottling sauces stir well to equalize the sediment in each bottle.

Digestive Relish.

Jamaica ginger (ground)	2	ounces.
Black pepper	1	ounce.
Capsicum (ground)	1	ounce.
Pimento (ground)	1	ounce.
Mustard (ground)	1	ounce.
Coriander seed (ground)	1	ounce.
Mace (ground)	½	ounce.
Nutmegs (ground)	½	ounce.
Cloves (ground)	½	ounce.
Cardamom seed (ground)	3	drams.
Garlic	4	ounces.
Shallots (young onions)	4	ounces.
Tartaric acid	1	ounce.
Vinegar (best)	5	quarts.

Bruise the onions and garlic; boil with the spices for 15 minutes, then add.

Mushroom catsup	3	pints.
Canton soy	2	pints.

Again boil for 15 minutes; pour into a keg; add

Salt	½	pound.

Let stand for two weeks (agitate occasionally) strain.

Always use a porcelain lined vessel for boiling acid preparations.

East India Sauce, Cheap.

Vinegar	25	gallons.
Canton soy	4	gallons.
Sugar coloring	½	gallon.
Salt	14	pounds.
Cayenne pepper	1½	pounds.
Ginger (ground)	3	pounds.
Cloves (ground)	1	pound.
Tamarinds	10	pounds
Onions	10	pounds.
Garlic	4	pounds.
Salicylic acid	4	ounces.
Borax	8	ounces
Water, sufficient to make up to	60	gallons

Process for making: Put the spices in a pan of cold water and boil for half an hour; boil the onions and garlic until soft; soak the tamarinds in water for 12 hours and wash out the pulp; dissolve the borax and salicylic acid in boiling water; mix all the ingredients together in a large cask; stir occasionally for two weeks and strain. Stir well when bottling so as to equalize the sediment in each bottle.

Yorkshire Relish.

Curcuma (powdered)	4	ounces.
Coriander seed (powdered)	2	ounces.
Cayenne (powdered)	2	ounces.

Cardamom seed (powdered) 1 ounce.
Black pepper (powdered). 2 ounces.
Mustard seed (powdered). 4 ounces.
Cinnamon (powdered).... 1 dram.
Mace (powdered)..... 1 dram.
Cloves (powdered)..... 5 drams.
Allspice (powdered)..... 2 ounces.
Assafoetida (powdered).. 1 ounce.
Acetic acid (strong)..... 4 ounces.
Brown sugar.....24 ounces.
Sugar coloring..... 1 pint.
Canton soy..... 2 pints.
Salicylic acid..... 1 dram.
Vinegar ..... 1 gallon.
Salt ..... ½ pound.
Mushroom catsup..... ½ gallon.

Dissolve the assafoetida in the strong acetic acid; boil the spices in the vinegar for 15 minutes; pour into a keg; add the other ingredients; stir occasionally for a month and strain. Always use a porcelain lined vessel for boiling vinegar.

North of England Sauce.

Powdered pimento..... 6 pounds.
Powdered cloves..... 3 pounds.
Powdered black pepper... 3 pounds.
Powdered assafoetida.... 4 ounces.
Cayenne pepper..... ½ pound.
Acetic acid..... 2 gallons.
Malt vinegar..... 4 gallons.
Water ..... 6 gallons.

Macerate together for three days, then strain, and wash the marc with 4 gallons of water. Reserve the strained portion, then boil the marc for ten minutes with 24 gallons of water, add
Molasses .....12 pounds.
Salt .....12 pounds.
Burnt sugar..... 2 pounds.
Soy ..... 6 gallons.

Boil for another quarter of an hour, and strain. When cold mix the strained liquors, and add salicylic acid one-half ounce dissolved in spirit of chloroform 2 ounces.

Barsaloux Sauce.

New Orleans sugar..... 3¾ pounds.
Salt .....15 ounces.
Garlic .....15 ounces.

Grind the garlic in a meat cutter or mill; put into a frying pan with the sugar and salt and fry brown. Take
Cayenne pepper..... 2 ounces.
Ginger (ground)..... 7 ounces.
Cloves ..... 7 ounces.
Black pepper..... 7 ounces.

Soak in water (one-half gallon) over night and boil for three-quarters of an hour. Mix all together and add
Vinegar ..... 5 pints.
Water ..... 7 pints.

Let stand for a week and strain.

Alum Baking Powder, One Spoon.

Burnt alum (powdered).....16 pounds.
Soda bicarb.....17 pounds.
Starch (powdered).....25 pounds.

Alum Baking Powder, Two Spoons.

Burnt alum (powdered).....16 pounds.
Soda bicarb.....17 pounds.
Starch (powdered).....50 pounds.

Phosphate Baking Powder, One Spoon.

Acid phosphate of calcium..20 pounds.
Burnt alum.....20 pounds.
Soda bicarb.....29 pounds.
Starch (powdered).....30 pounds.

Phosphate Baking Powder, Two Spoons.

Acid phosphate of calcium..20 pounds.
Burnt alum.....20 pounds.
Soda bicarb.....29 pounds.
Starch (powdered).....60 pounds.

Slow Rising Cream Tartar Baking Powder, Two Spoons.

Cream of tartar..... 8 pounds.
Soda bicarb..... 6 pounds.
Starch powdered.....14 pounds.

Mix.

Quick Rising Baking Powder, Two Spoons.

Tartaric acid.....15 pounds.
Soda bicarb.....17 pounds.
Starch powdered.....64 pounds.
Mix.

Salt Rising Baking Powder, Two Spoons.

Tartaric acid.....5 pounds.
Soda bicarb..... 6 pounds.
White sugar powdered.... 4 pounds.
Dried powdered salt..... 4 pounds.
Magnesia carb., light..... ½ pound.
Starch powdered..... 8 pounds.
Mix.

Self-Raising Flour.

Cream of tartar..... 10 ounces.
Soda bicarb..... 6 ounces.
Best flour.....100 pounds.

General Directions for Mixing Baking Powder.

The ingredients should be sifted separately into a mixing trough; sift the starch or flour first; then the acid, mix well and then sift the soda, mix again well using preferably a flat wooden paddle. Then put the powders into a mixing machine; or sift them well at least three times so as to ensure thorough mixing; if you have no mixing machine, you can mix the powders in one of those keg-shaped rectangular churns kept for sale by leading hardware dealers; be careful to have all your materials quite dry; moisture is detrimental to the keeping properties of all baking powders especially so to those made with tartaric acid or cream of tartar. The starch in baking powders tends to preserve the quality unimpaired by preventing the acids from attacking the soda.

Fruit Juices.

I give instructions by which all confectioners may extract and preserve their own fruit essences, and so guard the health and add to the pleasure of all for whom they provide. Among the juicy fruits are strawberries, raspberries, blackberries, cherries and currants; among non-juicy fruits are the apples, pears, peaches, quinces, apricots and plums.

Mash the juicy fruits in a basin to a pulp. Place on the fire and make scalding hot. Now pour into a hair sieve and allow the juice to strain through. Put into bottles and securely tie down. Place these bottles in a caldron of cold water and boil for twenty minutes. Remove from the fire and allow to remain in the caldron until cold. Then set away for use.

In the case of non-juicy fruits, such as apples, pears, peaches, etc., put the fruit into a basin. Cover with water and boil to a pulp. Now place on a hair sieve and allow to drain without any pressing. Observe now that it is only the liquor which passes through the sieve without pressing which is to be used for flavoring purposes. What remains in the form of pulp is not adapted for these uses. Now put the juice obtained as above into bottles, and proceed to treat as already laid down for the juicy fruits.

The foregoing processes are to be gone through with in the case where the extracts are to be kept transparent and clear, as for syrups, cordials and beverages.

In case where the flavorings are to be used for any purpose where transparency or clearness is not desirable, such as for ice creams, fruit ices, or bonbons, then I would use not only the clear fluid, but the pulp of the fruit also. I would for these opaque pur-

poses save and utilize everything of the fruit except the skins and seeds. This pulp is to be treated as already laid down.

As thus obtained and preserved our confectioners can supply themselves with a quantity of perfectly pure extracts of all their favorite fruits, and which can always be at hand, for flavoring every description of pastry, cakes, pies, tarts, puddings, creams, ices and beverages, and at any season of the year. Especially when there is any one in the house who is sick or feverish, cordials may be flavored with these delightful sub-acids—these remedies and restoratives of kind mother Nature herself—such as will shoot through all the veins of the most debilitated and infirm the most delicious sensations of happiness and hope.—James W. Parkinson, in Confectioners' Journal.

Lemon Extract.

Oil of lemon	8 ounces.
Cologne spirits, 188 per cent.	96 ounces.
Water	24 ounces.
Tincture of turmeric q. s. to color.	

Dissolve the oil in the spirits; shake well, and slowly add the water color and filter.

Always use cologne spirits (deodorized and purified alcohol) for the manufacture of flavoring extracts the cost is very little more, the product is much finer than can be made from common alcohol.

Lemon Extract Soluble.

Oil of lemon	1 ounce.
Cologne spirits	9 ounces.
Magnesia carbonate	1 ounce.
Water	9 ounces.
Tincture of turmeric or artificial yellow	q. s.

Put the magnesia into a mortar; rub in the oil; stir in the spirits slowly; pour into a gallon bottle and set aside for two days, then add the water; a portion at a time, shaking well; let stand a week before filtering; when filtered add the tincture of turmeric.

Orange Extract, Soluble.

May be made in the manner directed for lemon extract soluble; by substituting oil of orange for oil of lemon, and by making the color a darker tinge by using a few drops of caramel in addition to the tincture of turmeric.

Extract of Vanilla No. 1.

Vanilla beans	2½ pounds.
Granulated sugar	2½ pounds.
Cologne spirits, 188 per cent	2½ gallons.
Water	2 gallons.

Cut the beans lengthwise, then crosswise into small pieces; bruise in an iron mortar with the sugar (adding the sugar a portion at a time); place in a covered vessel with the spirits and water and macerate for 7 days; then place in a percolator; percolate and press the marc. Save the marc for second quality goods.

Extract of Vanilla, Cheap.

Tonka beans	8 ounces.
Marc left from the No. 1 extract	
Hot water	1½ gallons.
Simple syrup	1 pint.
Cologne spirits, 188 per cent	3 quarts.
Sugar coloring	1 pint.

Cut the tonka beans, and bruise in a mortar; pour half a gallon of boiling water on them, cover up; when cold

skim off any fat that may rise to the surface; strain and set aside.

Stew the marc left from the No. 1 extract for half an hour with a gallon of water; in a tightly closed vessel; when cold strain; add 3 quarts of spirits, 188 per cent, 1 pint of simple syrup, 1 pint of sugar coloring and the tonka extract. Mix well and filter.

Tincture of Vanilla from Vanilline.

Vanilline crystals..... ½ ounce.
Cologne spirits, 188 per cent ..... 1 quart.
Distilled water..... 2 quarts.
Simple syrup..... 1 quart.

Some confectioners prefer a colorless extract as above; when color is required add caramel (burnt sugar) 4 ounces.

Dissolve the vanilline in the alcohol; then add the water, shake well and add the syrup.

Tincture of Vanilline from Vanilline and Coumarin.

Vanilline crystals..... 1 ounce.
Coumarin ..... 1 dram.
Cologne spirits, 188 per cent 1 quart.
Distilled water..... 2 quarts.
Simple syrup..... 1 quart.
Caramel (burnt sugar)..... 6 ounces.

Dissolve the vanilline and coumarin in the alcohol; then add the water; shake well and add the syrup then add the coloring.

Vanilline Sugar.

Vanilline ..... 1 ounce.
Cologne spirits, 188 per cent. 2 ounces.
Powdered sugar.....32 ounces.

Dissolve the vanilline in the alcohol; put 4 ounces of the sugar in a porcelain lined or granite-ware pan, and pour on the solution of vanilline; mix well; then mix in the remainder of the sugar and dry by a very gentle heat; the ordinary summer temperature will do; when dry pack in tin cans.

Vanilline Syrup.

Vanilline ..... ¼ ounce.
Alcohol ..... 8 ounces.
Simple syrup..... 7 pints.
Caramel ..... 8 ounces.

Dissolve the vanilline in the alcohol, and add to the syrup; then add the coloring.

Lemon Syrup Without Acid.

Lemon extract soluble..... 8 ounces.
Simple syrup..... 1 gallon.

Color with tincture of turmeric.

Lemon Syrup With Acid.

Lemon-extract soluble..... 8 ounces.
Tartaric acid..... 1 ounce.
Water ..... 8 ounces.
Simple syrup..... 7 pints.

Dissolve the acid in the water and add to the syrup; then add the soluble lemon extract.

Color with turmeric.

Raspberry Extract, Artificial.

Butyrate of amyl..... 1 ounce.
Oenanthic ether.....½ ounce.
Formic ether.....¼ ounce.
Aldehyde .....¼ ounce.
Acetate of amyl..... 2 ounces.
Tincture of orris root..... 4 ounces.
Oil of rose..... 5 drops.
Glycerin ..... 8 ounces.
Cologne spirits, 188 per cent.48 ounces.
Water, clear.....16 ounces.
Solution of cochineal..... q. s.
Caramel ..... q. s.

Mix the ethers with the spirits; add the tincture of orris and oil of rose.

Mix the water and glycerine together and in this mixture add enough solution of cochineal and caramel to give the desired shade; and add slowly

with continuous shaking to the spirituous solution.

Artificial extracts may be diluted to suit price.

Strawberry Extract, Artificial.

Butyric ether..... 4 ounces.
Acetate of amyl..... 2 ounces.
Formic ether..... 1 dram.
Aldehyde ..... 1 dram.
Extract of orris..... 8 ounces.
Oil of rose..... 5 drops.
Oenanthic ether..... 1 ounce.
Cologne spirits, 188 per cent.48 ounces.
Water, clear.....16 ounces.
Solution of cochineal..... q. s.
Caramel ..... q. s.

Mix the ethers with the spirits, add the extract of orris and oil of rose.

Mix the water and glycerine together and in this mixture add enough solution of cochineal and caramel to give the color desired; and add slowly with continuous shaking to the spirituous solution.

Make the color of a lighter shade than the raspberry extract. The exact proportions of color for the above cannot be given here on account of the varying strengths of caramel and cochineal solutions.

Cinnamon Extract.

Oil of cinnamon..... 2 ounces.
Cologne spirits, 188 per cent.64 ounces.
Water .....32 ounces.

Color with tincture of red saunders.

For cheap trade use oil of cassia instead of oil of cinnamon and add 32 ounces more of water and carb. magnesia 1 ounce; for filtering see directions for lemon extract soluble.

Clove Extract.

Oil of cloves..... 2 ounces.
Cologne spirits, 188 per cent.64 ounces.
Water .....32 ounces.

Dissolve the oil in the spirit; add the water slowly; filter if necessary. Color with tincture of red saunders.

Peppermint Extract.

Oil of peppermint..... 2 ounces.
Cologne spirits, 188 per cent.64 ounces.
Water .....32 ounces.
Color with chlorophyll..... q. s.

Filter with carbonate of magnesia. The cheap extracts of cloves, peppermint, cinnamon, etc., are made by proceeding as directed in formula for lemon extract soluble.

Banana Extract.

Acetate of amyl..... 4 ounces.
Butyrate of amyl..... 4 ounces.
Aldehyde .....½ ounce.
Chloroform .....¼ ounce.
Butyric ether.....½ ounce.
Cologne spirits.....48 ounces.
Water .....16 ounces.
Tincture of turmeric..... q. s.

Pine Apple Extract.

Aldehyde ..... ½ ounce.
Chloroform ..... ½ ounce.
Butyrate of amyl..... 2½ ounces.
Acetate of amyl..... 5 ounces.
Butyric ether..... ½ ounce.
Cologne spirits.....48 ounces.
Water .....16 ounces.
Tincture of turmeric..... q. s.

Coloring for Extracts.

Dealers in aniline colors sell yellow, red, green, crimson and brown colors, for coloring extracts; the goods are made from anilines freed from arsenic and are generally described as vegetable colors; they are extensively used by manufacturers of flavoring extracts and perfumers, instead of turmeric, chlorophyll, red saunders, cudbear, etc.

Extract of Rose.

Otto of rose..... 2 drams.
Oil of rose geranium..... 1 dram.
Cologne spirits, 188 per cent.64 ounces.
Water, warm.....64 ounces.

Dissolve the oils in the spirits; shake well; and add the warm water (temperature of 130 degrees F.) a portion at a time. Color pink with cochineal.

Extract of Apple.

Chloroform .....½ ounce.
Spirits of nitrous ether..... 1 ounce.
Valerianate of amyl..... 5 ounces.
Acetate of ethyl..... 1 ounce.
Aldehyde. ..... 2 ounces.
Glycerin ..... 8 ounces.
Cologne spirits.....48 ounces.
Water .....30 ounces.

Color yellow with turmeric.

Extract of Celery.

Celery seed, ground..... 8 ounces.
Cologne spirits, 188 per cent. 5 pints.
Water q. s. to make up to.. 1 gallon.

Macerate the celery with 1 pint of spirits and ½ pint of water for 3 days; place in a percolator. Mix the remaining 4 pints of spirits with 2 pints of water and pour upon the drug; when percolation has ceased, run water through until the product measures one gallon. Color with turmeric tincture.

Extract of Peach.

Oil of bitter almonds (without prussic acid).....½ ounce.
Cologne spirits, 188 per cent.64 ounces.
Banana extract.....32 ounces.
Water .....32 ounces.

Dissolve the oil of bitter almonds in the cologne spirits; add the banana extract (see preceding formula for making same); shake well, and then add the water.

Extract of Ginger.

Jamaica ginger ground.... 8 pounds.
African ginger ground.... 1 pound.
Cayenne ..... 1¼ ounces.
Cologne spirits, 188 per cent. ..... 3⅛ gallons.
Water ..... 1½ gallons.
Red saunders..... 1 ounce.

Macerate the ginger, cayenne and red saunders, with a portion of the spirits and water mixed; percolate with the remainder of the menstruum, after 3 days maceration.

Extract of Ginger, Aromatic.

Jamaica ginger ground..... 3 pounds.
African ginger ground..... 1 pound.
Grains of paradise, ground.. 4 ounces.
Cloves ground..... 4 ounces.
Cassia ground..... 2 ounces.

Macerate with 1 gallon of 75 per cent alcohol for 7 days; percolate and run alcohol 75 per cent through until the product measures 3 gallons.

Extract of Ginger, Soluble.

Extract of ginger.....12 fl. ounces.
Magnesia carb..... 2 ounces.
Water .....12 ounces.

Rub the magnesia and ginger together in a mortar; slowly add 12 ounces of water; when well mixed, put into a bottle and let stand for 3 days (shaking occasionally); filter.

Aromatic Extract of Ginger, Soluble.

Extract of ginger aromatic.12 fl. ounces.
Magnesia carb..... 2 ounces.
Water .....12 ounces.

Rub the magnesia and extract of ginger together in a mortar; slowly add 12 ounces of water; when well mixed, put into a bottle and let stand for 3 days (shaking occasionally); filter.

Ginger Ale Extract.

Ext. of ginger arom, soluble..12 ounces.
Extract of rose..... 2 ounces.
Extract of lemon soluble... 2 ounces.

Ginger Ale Syrup.

Ginger ale extract..... 8 ounces.
Tartaric acid.....½ ounce.
Water ..... 8 ounces.
Simple syrup..... 7 pints.
Caramel ..... q. s.

Dissolve the acid in the water and filter, if necessary; add to the syrup; then add the ginger ale extract and color with caramel q. s.

Extract of Mead, Soluble.

Oil of lemon..... 1 ounce.
Oil of sassafras..... 1 dram.
Oil of cassia..... 1 dram.
Oil of cloves..... 2 drams.
Oil of nutmegs..... 1 dram.
Oil of coriander..... 1 dram.
Magnesia carb..... 1 ounce.
Cologne spirits.....32 ounces.
Water .....48 ounces.

Put the magnesia into a mortar; rub in the mixed oils; stir in the spirits slowly; pour into a gallon bottle and set aside for two days; then add the water, a portion at a time, shaking well; let it stand a week before filtering; when filtered add caramel q. s. to color brown.

Mead Syrup.

Extract of mead soluble....16 ounces.
Tartaric acid.....¼ ounce.
Water ..... 4 ounces.
Caramel ..... 8 ounces.
Simple syrup q. s. to make
up to..... 1 gallon.

Dissolve the acid in the water, add to half a gallon of simple syrup; add the other ingredients and make up to 1 gallon with simple syrup.

Extract of Soap Bark for Foam.

Soap bark, crushed..... 8 ounces.
Alcohol .....16 ounces.
Glycerine .....16 ounces.
Water .....32 ounces.

Macerate the soap bark for 2 days in a portion of alcohol, glycerine and water mixed; place in a percolator and percolate with the remainder of the menstruum; run water through the percolator until the product measures 4 pints.

For making a foam on beverages use from one-half to one ounce for each gallon of syrup.

Extract of Malt.

Malt, coarse ground..... 4 pounds.
Hot water.....12 pints.

Place the malt in a percolator and pour on 6 pints of hot water (temperature 175 deg. F.); macerate for an hour. Then commence to percolate and run through the remaining 6 pints of hot water; press out the malt, add to the percolate and evaporate by the heat of a water-bath, at a temperature not exceeding 130 deg. F. to a syrupy consistence.

Solution of Salicylic Acid for Fruit Preserving.

Salicylic acid..... 1 ounce.
Glycerine ..... 2 pints.
Saccharin ..... 1 dram.
Sugar white granld..... 8 pounds.
Water, clear q. s. to make
up to..... 2 gallons.

Dissolve the saccharin and salicylic acid in the glycerine; use a gentle heat; dissolve the sugar in the water; mix together and strain.

Take fresh sound clean fruit, pack tightly in jars and fill the jars to the top with the extract, keep the fruit in a cool place.

Vegetable Preservative.

Salicylic acid..... 1 ounce.
Common salt..... 1 pound.
Boiling water..... 2 gallons.

Dissolve the acid and salt in the boiling water; when cold filter. Pack the vegetables tightly in glass jars and fill up with the preservative.

Extract of Tolu, Soluble.

Balsam of tolu..... 3 ounces.
Alcohol, 188 per cent..... 8 ounces.
Carbonate of magnesia..... 4 ounces.
Water q. s. to make up to... 1 quart.

Dissolve the tolu in the alcohol with heat from a water-bath. Put the magnesia into a mortar and rub the solution of tolu into it thoroughly; add gradually to this 1 quart of boiling water, rubbing the mixture well; transfer to a bottle and let stand for 3 days, shaking occasionally; then filter through filtering paper, letting enough water run through the filter to make the product measure one quart.

Syrup of Tolu.

Extract of tolu soluble..... 2 ounces.
Simple syrup.....14 ounces.

Glycerine Jelly. A

Glycerine ..... 1 fl. ounce.
Corn starch..... 1 dram.
Water ...:..... 1½ drams.
Otto of rose.....
or
White rose extract..... q. s.

Mix the starch, glycerine and water, bring to the boiling point; when cold add the perfume and color with solution of red aniline or cochineal.

Glycerine Jelly. B

Gelatine ..... 2 ounces.
Glycerin ..... 4 ounces.
Boiling water..... 8 ounces.

Put the gelatine in the water contained in a jug, and continue to heat on a water-bath until it is soft; then add the glycerine, and when solution is effected color with cochineal perfume to suit:

Fill into bottles.

Glycerine and Honey Jelly.

Gelatine ..... 2½ parts.
Honey .....10 parts.
Glycerine .....60 parts.
Water .....27½ parts.

Mix the glycerine and water, and dissolve in the mixture, by the aid of heat, first the honey, then the gelatine. Perfume as required.

Arnica Jelly.

Glycerine .....8 fl. ounces.
Water. .....2 fl. ounces.
Starch ..... 1 ounce.
Tincture of arnica..... 1 ounce.
Otto of rose.....
or
White rose extract..... q. s.

Make it the desired color with solution of cochineal.

Oxide of Zinc Jelly.

Gelatine ..... 4 ounces.
Oxide of zinc..... 3 ounces.
Glycerine .... 5 ounces.
Water ..... 9 ounces.

Soak the gelatine in the water for an hour or so, add the glycerine, and melt with a gentle heat; rub this up smoothly with the zinc in a warm mortar, strain through fine muslin, if necessary; stir until it begins to cool.

When required for use it should be melted, and applied with a brush.

Simple Syrup.

Granulated sugar.....16 pounds.
Distilled water, cold..... 1 gallon.

Dissolve the sugar in the cold water, stirring occasionally, until dissolved;

select the best granulated sugar free from ultramarine or other adulteration.

Syrup of Squills.

Vinegar of squills (1 to 6)..12 ounces.
Water ..... 5 ounces.
Sugar .....32 ounces.

Dissolve the sugar with a gentle heat in the mixture of vinegar of squills and water.

Syrup of Saffron. A

Saffron, crushed..... 1 ounce.
Alcohol, 188 per cent..... 4 ounces.
Water .....14 ounces.
Sugar ..... 2 pounds.

Make a tincture and dissolve 2 pounds of granulated sugar in it.

Syrup of Saffron.

Saffron ..... 1 ounce.
Glycerine ..... 5 ounces.
Boiling water.....20 ounces.
Infuse 4 hours; strain and
add Sugar.....40 ounces.
Make a syrup and add
Alcohol, 188 per cent..... 4 ounces.

Syrup of Tar.

Tar ..... 3 ounces.
Cold Water..... 5 ounces.
Boiling water.....20 ounces.
Granulated sugar..... 1¾ pounds.

Pour the cold water upon the tar, and stir frequently during 24 hours; then pour off the water and throw it away. Pour the boiling distilled water upon the residue, stir briskly for 15 minutes, and set aside for 36 hours, stirring occasionally. Decant the solution, and filter. Lastly, in seventeen fluid ounces of the filtered solution dissolve the sugar by agitation without heat.

Syrup of Iodide of Iron.

Iron wire, cut small.....266 grains.
Iodine ..... 2 ounces av.
Granulated sugar.....14 ounces av.
Distilled water q. s. to
make ..... 1 pint.

Introduce the iron into a flask of thin glass of suitable capacity, add to it 5 fluid ounces of distilled water and afterward the iodine. Shake the mixture occasionally until the reaction ceases and the solution has acquired a green color and has lost the odor of iodine. Place the sugar in a porcelain capsule and filter the solution of iodide of iron into the sugar. Rinse the flask and iron wire with two fluid ounces of distilled water and pass the washings through the filter into the sugar. Stir the mixture with a porcelain or wooden spatula; heat it to the boiling point on a sand bath and having strained the syrup through linen into a tared bottle; add enough distilled water to make the product measure 16 ounces. Lastly shake the bottle and transfer its contents to small vials which should be completely filled, securely corked and kept in a cool dark place.

Syrup of Iodide of Iron, Tasteless.

Iodine .....400 grains.
Iron wire, fine bright and
finely cut.....200 grains.
Citrate of potassium.....620 grains.
Sugar ..... 10 troy oz...
Distilled water q. s. to
make ..... 16 fl ounces.

Mix the iron with four fluid ounces of distilled water in a flask; add 267 grains of the iodine and apply a gentle heat until the iodine is combined and the solution has acquired a greenish color. Then heat the contents of the flask to boiling; filter the liquid and wash the filter with one-half a fluid ounce of hot distilled water. To the

hot filtrate add the citrate of potassium and afterwards the remainder of the iodine and agitate until the liquid has assumed a greenish color; pour this upon the sugar contained in a bottle; agitate until solution has been effected and when the liquid is cold add enough distilled water to make 16 fluid ounces. Each fluid dram contains an amount of iron corresponding to about 3.6 grains of ferric iodide. The officinal syrup of iodide contains about 8 grains of ferrous iodide (protiodide of iron), in each fluid dram. The above preparation contains the iron in a ferric condition.

Syrup of Iodide of Iron.

Syrup of iodide of iron can be extemporaneously prepared, says Miss Austa Worthrop in Pac. Drug. Rev., by placing 480 grains iodine in a flask, adding 2½ ounces water and by degrees 150 grains reduced iron. When reaction has ceased, and the liquid has become green filter the solution into sufficient hot syrup (heated nearly to boiling point) to make 10 fluid ounces. Finally add a 50 per cent solution of citric acid containing 10 grains of the acid. The syrup keeps well, and the method of preparation is a rapid one.

Solution of Iodide of Iron.

(For syrup of iodide of iron.)

Iron wire, fine, bright and finely cut..... .3 troy oz.
Iodine .....4718 grains.
Hypophosphorus acid (N. F.)..... 180 minims.
Distilled water enough to make..... 16 fl. ounces.

Mix the iron with 12 fluid ounces of distilled water in a flask, add about one-half of the iodine, agitate continuously until the liquid becomes hot Then moderate the reaction by placing the flask in cold water or by allowing cold water to flow over it, meanwhile, keeping up the agitation. When the reaction has moderated, add one-half of the remaining iodine at a time and carefully moderate the reaction each time, in the manner above directed. Finally raise the contents of the flask to boiling and filter immediately through moistened, pure filtering paper (the point of the filter being supported by a pellet of absorbent cotton), into a bottle containing the hypophosphorus acid. When all the liquid has passed through, rinse tne flask with ½ an ounce of boiling distilled water and pass this through the filter. Cork the bottle and set it aside to cool. Finally add enough distilled water to make the product measure 16 fluid ounces.

Each fluid dram contains about 45 grains of iodide of iron (ferrous). On mixing 1 volume of this solution of iodide of iron with 5 volumes of simple syrup the product will contain about 60 grains of iodide of iron (ferrous) in each fluid ounce and will be practically identical measure for measure, but not weight for weight with the officinal syrup of iodide of iron.

Solution of Iodide of Iron, Br.

(For syrup of iodide of iron.)

Iron wire, fine and bright.. 1 ounce.
Iodine ..... 2 ounces.
Water ..... 2 ounces.

Cut the wire and add it to the water and iodine contained in the flask. Start chemical action by heating slightly, then set aside until action ceases and all the iodide has disappeared. Decant, add 1 dram of hypophosphorus acid, and filter, making up to 4 ounces with water which has been used to wash out the flask. One part of this solution to 7 parts of syrup makes syr. ferri iod.

Syrup of Acacia Gum.

Gum arabic..... 2½ ounces.
Granulated sugar.....17½ ounces.
Oil wintergreen..... 5 minims.
Oil cloves.....10 minims.
Water distilled.....26 ounces.

Dissolve the gum arabic in 8 ounces of the water.

Dissolve the sugar in the remainder of the water by the aid of heat; whilst still hot add the oils, and shake well; then add the mucilage of acacia.

Syrup of Allii.

Garlic, fresh peeled..... 3½ ounces.
Granulated sugar.....16 ounces.
Acetic acid, diluted.....20 ounces.

Bruise the garlic in a mortar and macerate in the acetic acid for seven days; press out and filter; in the filtrate dissolve the sugar. Keep the syrup in a cool place, and in well stoppered bottles.

Syrup of Apomorphine Hydrochlorate.

Br. Form.

Apomorphine hydrochlorate ..... 4 grains.
Alcohol ..... 5½ fl. drams.
Water distilled..... 5½ fl. drams.
Hydrochloric acid..... 1½ fl. drams.
Simple syrup.....14½ fl. ounces.

Mix the alcohol and water; add the apomorphine and dissolve by agitation; add the acid and the syrup.

Syrup of Asafetida.

Asafetida gum.....240 grains.
Alcohol ..... 1 ounce.
Water ..... 7 ounces.
Granulated sugar..... 13 ounces.

Rub the asafetida in a mortar with the alcohol; heat the water to 150 F. and add to the alcohol and asafetida; pour into a quart bottle and let stand for 3 days; filter and dissolve the sugar in the filtrate by aid of gentle heat.

Syrup of Aurantii.

Orange peel recent..... 3 ounces.
Alcohol, 188 per cent..... 6 ounces.
Carbonate of magnesia.....½ ounce.
Granulated sugar.....28 ounces.
Water ..... 2 pints.

Cut the orange peel into small pieces and macerate in the alcohol for 7 days; press out the tincture, and add to it the magnesia; rub to a smooth cream in a mortar, gradually adding a pint of the water; filter, and run the remainder of the water through the filter; in this dissolve the sugar and strain.

Syrup of Blackberry Arom.

Blackberry root, powdered 2¼ ounces.
Cinnamon, powdered....120 grains.
Nutmeg, powdered.....120 grains.
Cloves, powdered..... 60 grains.
Allspice, powdered..... 60 grains.
Sugar, granulated..... 11 ounces.
Alcohol diluted..... q. s.
Blackberry juice..... q. s.

Percolate the drugs with diluted alcohol until 4 fl. ounces are obtained. To this add 7 fluid ounces of blackberry juice and dissolve the sugar in the liquid by agitation. Lastly add enough blackberry juice to make sixteen fluid ounces.

Syrup of Buckthorn Bark.

Fl. ext. of frangula..... 3 ounces.
Simple syrup.....13 ounces.

Mix.

Syrup of Calcium Lactophosphate.

Phos. calcium, precipitated ..... 1 ounce.
Lactic acid..... 9½ fl. drams.
Orange flower water.... 3 fl. ounces.
Sugar granulated.....28 ounces.

Hydrochloric acid, water of ammonia, water, each a sufficient quantity to make 2 pints.

Mix the precipitated phosphate of calcium with 13 fl. ounces of cold water and add enough hydrochloric acid to dissolve it. Filter the solution and add to the filtrate 3 pints of cold water and water of ammonia, until after standing a few moments the odor of ammonia may be distinguished. Transfer the mixture at once to a fine wetted muslin strainer.

As soon as the liquid has run off return the magma to the vessel, pour on more water, agitate, and repeat until the precipitate is thoroughly washed and again transfer to the strainer. When it is drained, mix the magma at once with the lactic acid and stir until dissolved. Then add the orange flower water and enough water to make the solution weigh about three hundred and fifty parts (or measure 15 fl. ounces), filter and pass enough water through filter to measure in all seventeen fluid ounces. Lastly, add to this the sugar, dissolve it by agitation, without heat; strain.

Syrup of Calcium Phosphate.

(Wiegand's.)

Calcium phos., precipitated 1¼ ounces.
Hydrochloric acid..... 4½ drams.
Sugar .....14½ ounces.
Water ..... 8 ounces.

Dissolve the calcium phosphate in the acid previously mixed with 12 fluid ounces of water, filter, add the sugar and the remainder of the water, dissolve by agitation and strain.

Syrup of Calcium Phosphate.

Calcium phos., precipitated .....256 grains.
Phosphoric acid, glacial..240 grains.
Sugar ..... 15 ounces av.
Distilled water..... 8 fl. ounces.
Spirit of lemon..... 24 drops.

Mix the calcium phosphate with the water, heat moderately, gradually add the acid until all the calcium salt is dissolved, replace the water lost by evaporation, filter, dissolve the sugar in the filtrate, strain, if necessary, and add the spirit.

Syrup of Castanea.

(For whooping cough.)

Fl. ext. of chestnut leaves... 1 ounce.
Tincture of belladonna..... 2 drams.
Tincture of hyoscyamus..... 2 drams.
Syrup of wild cherry to make .....16 ounces.

Dose: One teaspoonful.

Syrup of Chloral Hydrate Br.

Chloral hydrate.....320 grains.
Distilled water..... 6 fl. drams.
Simple syrup, q. s. to.... 4 fl. ounces.

Dissolve the chloral in the water and add the syrup.

Syrup of Glycyrrhizin.

Ammoniated glycyrrhizin...½ ounce.
Glycerine ..... 2 ounces.
Hot water..... 2 ounces.
Simple syrup.....12 ounces.

Dissolve the glycyrrhizin by rubbing in a mortar with the hot water; add the glycerine and syrup.

Syrup of Hypophosphites.

(Churchill's.)

Calcium hypophosphite.345 grains.
Sodium hypophosphite.115 grains.
Potassium hypophosphite .....115 grains.
Dil. hypophosphorus acid ..... 15 minims.
Granulated sugar..... 8¾ ounces.
Spirit of lemon..... 1¼ drams.

Water enough to make. 16 fl. ounces.

Triturate the hypophosphites with 7 fluid ounces of water until dissolved; add the spirit and acid and filter. In the filtrate dissolve the sugar by agitation or percolation and add enough water through the filter to make 16 fluid ounces. Strain, if necessary.

Syrup of Hypophosphites, Co.

Calcium hypophosphite....256 grains.
Potassium hypophosphite..128 grains.
Sodium hypophosphite.....128 grains.
Iron hypophosphite..... 16 grains.
Manganese hypophosphite.. 16 grains.
Potassium citrate..... 40 grains.
Citric acid..... 15 grains.
Quinine hydrochlorate..... 8 grains.
Tincture of nux vomica....160 minims.
Sugar ..... 13 ounces.
Water ..... q. s.

Rub the hypophosphites of iron and manganese with the potassium citrate and citric acid to powder, add 1 fluid ounce of water, and warm the mixture a few minutes until a clear greenish solution is obtained. Introduce the other hypophosphites and the quinine hydrochlorate, previously triturated together, into a bottle, next add the sugar, the iron and manganese solution first prepared, the tincture of nux vomica, and, lastly, enougn water to make up the volume, as soon as the sugar is saturated by the liquid, to 16 fluid ounces. Agitate until solution has been effected, and strain, if necessary.

Parrish's Syrup of Hypophosphites.

Calcium hypophosphite.288 grains.
Sodium hypophosphite. 96 grains.
Potassium hypophosphite ..... 96 grains.
Sugar ..... 12½ ounces.
Distilled water, hot.... 9 fl. ounces.
Orange flower water.... 4 fl. drams.

Make a solution of the hypophosphites in the hot water, filter, dissolve the sugar in the filtrate, strain, and to the whole add the orange flower water.

Compound Syrup of Hypophosphites with Iron, Nonprecipitating.

Calcium hypophosphite....256 grains.
Sodium hypophosphite.....128 grains.
Potassium hypophosphite..128 grains.
Manganese hypophosphite.. 16 grains.
Tinct. citro-chloride of iron, N. F..... 1 ounce.
Tinct. nux vomica.....160 minims.
Quinine hydrochlorate..... 8 grains.
Sugar ..... 12 ounces.
Water, enough to make.... 16 ounces.

The hypophosphites are dissolved in 6 ounces of water previously boiled, which is easily done by triturating the salts in successive portions of the water, the addition of an acid not being required. The quinine is dissolved in ½ ounce of warm water. These solutions are mixed and poured over the sugar. Shake well and add the tinctures of iron and nux vomica, then add enough water to make 16 fluid ounces. Shake until the sugar is dissolved, let stand for 24 hours and filter.

The substitution of the chloride for the hypophosphite of iron cannot well be urged against this preparation, since the amount of the original formula is comparatively insignificant and one of the causes of precipitation.

Syrup of Hypophosphites of Calcium.

Calcium hypophosphite.256 grains.
Citric acid..... 10 grains.
Sugar ..... 13½ ounces.
Water, enough to make. 16 fl. ounces.

Dissolve the calcium hypophosphite and citric acid in 8 fluid ounces of water, filter the solution, add the sugar

to the filtrate, and pass enough water through the filter to make the product, after the sugar has been dissolved by agitation, measure 16 fluid ounces. Each fluid dram contains 2 grains of calcium hypophosphite.

Syrup of Hypophosphites of Calcium, Manganese and Potassium.

Calcium hypophosphite.256 grains.
Manganese hypophosphite .....128 grains.
Potassium hypophosphite .....128 grains.
Distilled water, boiling. 3¼ fl. ounces.
Simple syrup enough to make ..... 16 fl. ounces.

Triturate the hypophosphites with the water, filter, and add the syrup.

Syrup of Hypophosphites of Calcium and Sodium.

Calcium hypophosphite.256 grains.
Sodium hypophosphite.256 grains.
Citric acid..... 10 grains.
Sugar ..... 13½ ounces.
Water, enough to make. 16 fl. ounces.

Dissolve the two hypophosphites and citric acid in 8 fluid ounces of water, filter the solution, add the sugar to the filtrate and pass enough water through the filter to make the product, after the sugar has been dissolved by agitation, measure 16 fluid ounces. Each fluid dram contains 2 grains each of calcium and sodium hypophosphites.

Syrup of Hypophosphites, with Iron.

Ferrous lactate in crusts..72 grains.
Potassium citrate..... 72 grains.
Syrup of hypophosphites, enough to make.....16 fl. ounces.

Triturate the two salts with a small quantity of syrup gradually added, until they are dissolved, then add the remainder of the syrup.

This preparation should be freshly made when wanted.

Syrup of Hypophosphite of Iron.

Iron hypophosphite.....128 grains.
Potassium citrate.....160 grains.
Orange flower water..... 1 fl. ounce.
Simple syrup q.s. to make 16 fl. ounces.

Dissolve the iron hypophosphite with the aid of the potassium citrate in the orange flower water, and add the syrup.

Each fluid dram contains 1 grain of hypophosphite of iron (ferric).

Syrup of Hypophosphites, Manganese.

Manganese sulphate.....120 grains.
Calcium hypophosphite... 80 grains.
Sugar ..... 13 ounces.
Orange flower water..... 2 fl. drams.
Water ..... q. s.

Dissolve the hypophosphite and sulphate in separate portions of water, mix the two solutions, filter, washing the precipitate in the filter with fresh distilled water; evaporate the filtrate to 8 fluid ounces, dissolve the sugar in the filtrate, strain, and add the orange flower water.

Each fluid ounce contains 2 1-3 grains of manganese hypophosphite.

Syrup of Hypophosphite of Sodium.

Sodium hypophosphite...256 grains.
Citric acid..... 10 grains.
Sugar ..... 13 ounces.
Water, enough to make.. 16 fl. ounces.

Dissolve the sodium hypophosphite and the citric acid in 8 fluid ounces of water, and filter the solution. In this dissolve the sugar by agitation, and pass the remainder of the water through the filter. Each fluid dram contains 2 grains of sodium hypophosphite.

Syrup of Iron and Sodium Albuminate.

White of eggs..... 4 only.
Sugar ..... 2 ounces.

Tincture chloride of iron.. 2 fl. ounces.
Solution of soda..... q. s.
Water ..... q. s.

Mix the whites of eggs with the sugar and add enough water to effect complete solution; add the tincture of iron, and then enough of the solution of soda to dissolve the coagulated albumen; finally make up to 16 fluid ounces with water.

Syrup of Iron Ferric Chloride A (Codex.)

Solution of iron chloride. 2 fl. drams.
Simple syrup, q. s. to make up to..... 16 fl. ounces.

Syrup of Iron Ferric Chloride B (Codex.)

Tincture of chloride of iron 1 fl. ounce.
Sodium citrate..... 2 ounces.
Water ..... 6 fl. ounces.
Sugar .....10 ounces.
Syrup enough to make....16 fl. ounces.

Mix the tincture of ferric chloride with the water and dissolve in this mixture the sodium citrate and the sugar with the aid of heat; when cold add sufficient syrup to make 16 fl. ounces.

Syrup of Iron and Ammonium Phosphate.

Iron sulphate.....635 grains.
Sodium phosphate.....820 grains.
Glacial phosphoric acid, C. P.....900 grains.
Ammonia water..... q. s.
Sugar .....13½ ounces.
Distilled water..... q. s.

Dissolve the sodium phosphate and the iron sulphate separately in distilled water, mix the solutions; wash the resulting precipitated iron phosphate. Then to one-half of the phosphoric acid, dissolved in 2¼ fluid ounces of water, add ammonia water until exactly neutral. To the remainder of the phosphoric acid, dissolved in a like quantity of water, add the moist iron phosphate and dissolve by the aid of gentle heat; then add the solution of ammonium phosphate and the sugar, dissolve the whole, strain and evaporate to 16 fluid ounces. Each fluid dram contains 4½ grains iron phosphate, 4¾ grains ammonium phosphate, and 3½ grains of phosphoric acid.

Syrup of Iron and Ammonium Tartrate (Codex.)

Tartrate of iron and ammonium .....225 grains.
Distilled water, hot..... 4 fl. drams.
Simple syrup, q. s. to make up to..... 16 fl. ounces.

Dissolve the iron salt in the water and add the syrup.

Syrup of Iron and Potassium Tartrate (Codex.)

Tartrate of iron and potassium .....225 grains.
Distilled water, hot..... 4 fl. drams.
Simple syrup, enough to make ..... 16 fl. ounces.

Dissolve the iron salt in the water and add the syrup.

Syrup of Iron and Quinine Iodides (Bouchardat.) A

Iodine .....42 grains.
Iron in powder.....17 grains.
Simple syrup.....15½ fl. ounces.
Quinine sulphate. ..... 8 grains.
Diluted sulphuric acid.....q. s.
Distilled water..... 4½ fl. drams.

Digest the iodine, iron and 3 fluid drams of the water until the red-brown color of the iodine has disappeared; filter into the syrup. Then dis-

solve the sulphate of quinine in 2 fluid drams of water with the aid of diluted sulphuric acid and mix this solution with the prepared syrup.

Syrup of Iron Citrate (Codex.)

Iron citrate soluble.....240 grains.
Distilled water, hot..... 4 fl. drams.
Simple syrup, q. s. to
make up to..... 16 fl. ounces.

Syrup of Iron and Quinine Iodides. B

Quinine sulphate. .....20 grains.
Hypophosphorus acid dil.. q. s.
Potassium iodide..... 8 grains.
Simple syrup enough to
make ..... 8 fl. ounces.
Syrup of iron iodide (U.
S.) ..... 8 fl. ounces.

To the quinine sulphate add about 10 drops of commercial solution of hypophosphorus acid and then a small amount of syrup; when the quinine salt is dissolved, add the remainder of the syrup and afterwards the potassium iodide dissolved in a few drops of water; mix well. Now add the syrup of iron iodide and mix. Should any cloudiness appear, clear it up by a few drops of the hypophosphorus acid.

A fluid dram of this syrup contains about 4 grains of dry iodide of iron and about 6 grains of hydriodide of quinine.

Syrup of Iron Pyrophosphate (Codex).

Iron pyrophosphate soluble .....90 grains.
Distilled water..... 4 fl. drams.
Simple syrup, enough to
make .....16 fl. ounces.

Syrup Lobelia (Eclectic).

Vinegar of lobelia..... 8 fl. ounces.
Sugar .....16 ounces.

Dissolve by aid of heat; strain while hot.

Syrup of Lobelia, Thompsonian.

Lobelia seed..... 1 ounce.
Water .....16 fl. ounces.
Acetic acid dilute..... 1 fl. ounce.
Sugar .....13 ounces.
Tincture of lobelia..... 4 fl. ounces.

Boil the lobelia with the water and vinegar for one-half hour, occasionally replacing the water lost by evaporation, then strain, add the sugar, dissolve and when cool add to the tincture of lobelia.

Syrup of Manganese Iodide.

Manganese sulphate.....480 grains.
Potassium iodide.....570 grains.
Sugar ..... 6 ounces.
Distilled water..... q. s.

Dissolve the two salts each in 2 fluid ounces of water; mix them; dissolve and filter; add the sugar and enough water to make up to 8 ounces; strain.

Syrup of Manganese Phosphate.

Manganese sulphate....920 grains.
Sodium phosphate..... 3½ ounces.
Hydrochloric acid..... 5 fl. drams.
Sugar ..... 13¾ ounces.
Water, enough to make. 16 fl. ounces.

Dissolve the salts separately in 5 fluid ounces of water each, and add the solution of sodium phosphate to the solution of manganese sulphate as long as it produces a precipitate, which wash with cold water, and then dissolve the magma by adding the hydrochloric acid; dilute with water until it measures 9 fluid ounces, and in this dissolve the sugar; strain.

Each fluid dram contains 5 grains of manganese phosphate.

Syrup of Mercury Iodide (Gibert).

Red iodide of mercury.... 3 grains.
Potassium iodide.....120 grains.

Water ..... 3 fl. drams.
Simple syrup, enough to
make ..... 10 fl. ounces.

Dissolve the mercuric and potassium iodides in the water and add the syrup.

Syrup of Mitchella Compound.
(Eclectic.)
(Mother's Cordial.)

Squaw vine.....960 grains.
Helonias root.....240 grains.
Cramp bark.....240 grains.
Blue cohosh.....240 grains.
Oil of sassafras..... 4 drops.
Sugar ..... 3½ ounces.
Alcohol dilute..... q. s.

Mix the oil with the drugs and percolate with diluted alcohol until 14 ounces are obtained. In this dissolve the sugar and strain.

The above is known as uterine tonic. Compound syrup of partridge berry and mother's cordial.

Syrup Opiated (Codex).

Extract of opium.....19½ grains.
Water, hot..... ½ ounce.
Simple syrup, enough to
make .....16 fl. ounces.

Dissolve the extract in the hot water and add the syrup.

Syrup of Opium and Ipecac.
(Syrup of Dover's Powder.)

Fluid ext. ipecac..... 64 minims.
Tincture of opium.....670 minims.
Sugar ..... 12 troy ounces.
Cinnamon water q. s.
to make..... 16 fl. ounces.

Mix the fluid extract and tincture with 6 fluid ounces of cinnamon water and filter the liquid. To this add the sugar and enough cinnamon water to make the product, after the sugar has been dissolved by agitation, measure 16 fluid ounces.

Each fluid dram represents 5 grains of Dover's Powder or ½ grain each of ipecac and opium.

In place of the above directed quantities of fluid extract of ipecac and tincture of opium, 640 minims of the official tincture of ipecac and opium may be taken.

Syrup of Phosphates Compound.
(Chemical Food.)

Calcium phosphate.....256 grains.
Iron phosphate.....128 grains.
Sodium phosphate.....128 grains.
Potassium phosphate..... 64 grains.
Solution of acid phosphate.. 1 ounce.
Orange flower water..... 1 ounce.
Simple syrup, q. s. to make. 1 pint.

Dissolve the salts in the solution of acid phosphate and orange flower water; add the syrup.

Syrup of Rhubarb and Potassium.
(Neutralizing Cordial.)

Rhubarb .....240 grains.
Hydrastis .....120 grains.
Cinnamon .....120 grains.
Potassium carbonate.....240 grains.
Oil of peppermint..... 5 drops.
Sugar ..... 14 ounces.
Alcohol ..... 8 ounces.
Water ..... 16 ounces.

Dissolve the potassium carbonate in a portion of the water and mix in a suitable sized container with the rhubarb, hydrastis and cinnamon, the last three being in fine powder. Now add the alcohol and the remainder of the water and allow to stand for 48 hours, agitating the whole briskly at frequent intervals. Decant the clear portion, and filter the remainder through absorbent cotton, adding sufficient water through the filter to make the whole measure 24 fluid ounces. In this dis-

solve the sugar by agitation, and add the oil of peppermint.

Syrup of Tolu.

Tincture of tolu..... 2 fl. ounces.
Magnesium carbonate..120 grains.
Sugar ..... 28½ ounces.
Water ..... 16 fl. ounces.

Triturate the tincture with the magnesium carbonate and 2 ounces of sugar to a smooth paste, gradually add the remainder of the sugar, stirring constantly meanwhile, filter, and in the filtrate dissolve the remainder of the sugar by agitation or percolation.

Syrup of Rhubarb Aromatic.

(Spiced Syrup of Rhubarb.)

Rhubarb, powdered.....600 grains.
Cloves, powdered..... 60 grains.
Cinnamon, powdered..... 60 grains.
Nutmeg, powdered..... 60 grains.
Syrup ..... 3 pints.
Diluted alcohol..... q. s.

Mix the powders, and having moistened the mixture with diluted alcohol place in a conical percolator and pour diluted alcohol upon it, until 8 fluid ounces are obtained; add this to the syrup previously heated and mix.

The aromatic tincture of the U. S. P. of 1870 is identical with that used in making this syrup.

The U. S. P. Formula for 1880 is:

Aromatic tinct. of rhu.
barb ..... 2 fl. ounces.
Syrup .....14 fl. ounces.

Mix the aromatic tincture of rhubarb with the syrup.

The substitution of glycerin for one-half of the syrup would certainly be an improvement.

Syrup of Saccharin.

Saccharin .....150 grains.
Sodium carbonate, pure..165 grains.
or
Sodium bicarbonate, pure.180 grains.
Distilled water..... 32 fl. ounces.

Dissolve by the aid of a gentle heat.

May be employed as a substitute for simple syrup.

Syrup of Senna With Manna.

(Syrupus Mannatus.—Compound Syrup of Manna.

Syrup of senna, U. S. P... 4 fl. ounces.
Syrup of manna, N. F..... 4 fl. ounces.

Syrup of Squills Compound.

(Hive Syrup.)

Squills, powdered..... 2½ ounces.
Senega, powdered..... 2½ ounces.
Tartrate of antimony and potassium .....28 grains.
Sugar .....26 ounces.
Precipitated phosphate of calcium .....90 grains.
Diluted alcohol.....
Water....aa q. s. to make 2 pints.

Mix the squill and senega and moisten with diluted alcohol; macerate for 24 hours; pack in conical percolator and gradually pour upon it diluted alcohol until 1½ pints of tincture are obtained. Boil and evaporate by means of a water-bath to half a pint; triturate the mixture with the precipitated phosphate of calcium; filter, and add through the filter enough warm water to make the whole measure one pint. In this dissolve the sugar. Dissolve the tartar emetic in one ounce of water and mix thoroughly with the syrup.

Syrup of Violets.

Ionone solution (1 to 10)....2 drams.
Cologne spirits, 188 per cent..6 drams.
Simple syrup q. s. to make...1 pint.

Color with chlorophyll.

Syrup Wild Cherry (U. S.) 1880.

Wild cherry, powdered.. 5½ ounces.
Sugar granulated.....28 ounces.
Glycerine ..... 2 fl. ounces.
Water q.s. to make up to 2 pints.

Moisten the wild cherry thoroughly with water and macerate for 24 hours. Pack firmly in a cylindrical glass percolator and gradually pour water upon it until 15 ounces of percolate are obtained. Dissolve the sugar in the liquid by agitation without heat, add the glycerine and strain.

A syrup may be readily made if desired by adding to 2 ounces fluid ext. wild cherry soluble, 12 ounces simple syrup and 2 ounces of glycerin.

Tincture of Lobelia Co.—Eclectic.

(King's Expectorant Tincture.)

Lobelia (herb).....120 grains.
Bloodroot .....120 grains.
Skunk cabbage.....120 grains.
Canada snake root.....120 grains.
Pleurisy root.....120 grains.
Water .....q. s.
Alcohol .....q. s.

Mix the drugs and reduce to fine powder; mix the alcohol and water in the proportion of 3 of the former to 1 of the latter, and extract the mixed drugs by percolation with this menstruum so as to obtain 16 fluid ounces of product.

Tincture of Lobelia and Capsicum Co.—Eclectic.

(Anti-spasmodic Tincture, Eclectic)

Lobelia .....1 ounce.
Capsicum ..... 1 ounce.
Skunk cabbage..... 1 ounce.
Diluted alcohol..... q. s.

Mix the drugs in moderately fine powder, and extract by percolation with diluted alcohol so as to obtain 16 fluid ounces.

Tincture of Lupulin—Eclectic.

Lupulin ..... 2¾ ounces.
Alcohol .....16 fl. ounces.

Macerate for 7 days, shaking occasionally, and filter, adding enough alcohol through the filter to make 16 fluid ounces.

Tincture of Opium—Ammoniated.

(Brit. Pharm.)

Opium ..... 80 grains.
Spanish saffron.....144 grains.
Benzoic acid.....144 grains.
Oil of anise..... 50 minims.
Stronger water of ammonia .....3¼ fl. ounces.
Alcohol ..... q. s.

Mix the first five ingredients with 13 fluid ounces of alcohol, macerate for 7 days, agitating occasionally, express, filter, and add enough alcohol to the filtrate to make 16 fluid ounces.

Tincture of Opium—Camphorated.

U. S. 1880.

Opium, powdered.....35 grains.
Benzoic acid.....35 grains.
Camphor .....35 grains.
Oil of anise.....37 minims.
Glycerine ..... 5 fl. drams.
Diluted alcohol q. s. to make .....20 fl. ounces.

Add eighteen ounces of diluted alcohol to the other ingredients and macerate for seven days in a well-covered vessel; then filter through paper, adding through the filter sufficient diluted alcohol to measure in all twenty fluid ounces.

Tincture of Prickly Ash Berries.

(Eclectic.)

Prickly ash berries in fine powder .....4½ ounces.
Diluted alcohol.....q. s.

Extract the drug by percolation with diluted alcohol so as to obtain 16 fluid ounces of tincture.

Tincture of Pulsatilla.

Pulsatilla herb, fresh.....8½ ounces.
Strong alcohol.....q. s.

Cut the herb into small pieces and add strong alcohol enough so that the product will measure 16 fluid ounces; macerate for 14 days, express and filter.

Tincture of Quinine.

(Brit. Pharm.)

Quinine sulphate.....128 grains.
Tinct. of bitter orange peel ..... 16 fl. ounces.

Tincture of Quinine—Ammoniated.

(Brit. Pharm.)

Water of ammonia..... 2 fl. ounces.
Quinine sulphate.....128 grains.
Diluted alcohol..... 14 fl. ounces.

Dissolve the sulphate of quinine in the alcohol with the aid of a gentle heat and add the ammonia.

Tincture of Poke Root—Eclectic.

Poke root, fine powder....3¼ ounces.
Diluted alcohol.....q. s.

Extract the drug by percolation with diluted alcohol so as to obtain 16 fluid ounces of tincture.

Tincture of Rhubarb Co.—Eclectic.

Rhubarb .....384 grains.
Dogsbane .....192 grains.
Golden seal.....192 grains.
Gentian .....192 grains.
Prickly ash berries.....192 grains.
Diluted alcohol.....q. s.

Mix the drugs, reduce to fine powder, and extract with diluted alcohol by percolation, so as to obtain 16 fluid ounces of tincture.

Tincture of Rhubarb—Koelreuter's.

Rhubarb, cut fine..... 2½ ounces.
Bitter orange peel, cut fine .....360 grains.
Centaury, cut fine....180 grains.
Fennel, crushed.....110 grains.
Distilled water..... 9 fl. ounces.
Alcohol, 188 per cent.. 7½ fl. ounces.

Mix and macerate for 8 days; strain and filter.

Tincture of Savin.

(Brit. Pharm.)

Savin, coarse powder.....2 ounces.
Diluted alcohol.....q. s.

Extract the drug by percolation so as to obtain 16 fluid ounces of tincture.

Tincture of Savin, Compound—Eclectic.

Fluid extract of savin.1 fl. ounce.
Tincture of castor....7½ fl. ounces.
Tincture of myrrh....7½ fl. ounces.

Mix.

Tincture of Senna, Compound—Eclectic.

(Elixir Salutis—Elixir of Health.)

Alexandria senna, cut...480 grains.
Coriander .....120 grains.
Raisins deprived of seeds ½ ounce.
Jalap, finely powdered..240 grains.
Diluted alcohol..... 16 fl. ounces.

Macerate for 7 days, shaking occasionally, and filter.

Tincture of Serpentaria Co.—Eclectic.

(Sudorific Tincture.)

Serpentaria .....160 grains.
Ipecac .....160 grains.
Spanish saffron .....160 grains.
Camphor .....160 grains.
Opium .....160 grains.
Diluted alcohol..... 16 fl. ounces.

Macerate the finely powdered drugs with the diluted alcohol for 7 days, agitating occasionally and filter.

Tincture of Shepherd's Purse.

(Rademacher's.)

Shepherd's purse herb freshly gathered .....10 ounces.
Alcohol .....12 fl. ounces.

Contuse the herb to pulp, add the alcohol; macerate for 7 days, express and filter.

Tincture of Skunk Cabbage.—Eclectic.

Skunk cabbage, recently dried ..... 3¼ ounces.
Diluted alcohol..... q. s.

Extract the drug in fine powder by percolation with diluted alcohol so as to obtain 16 fluid ounces.

Tincture of Stavesacre.—Eclectic.

Stavesacre seed, fine powd...11 ounces.
Absolute alcohol ..... q. s.

Percolate the drug with the absolute alcohol so as to obtain 16 fluid ounces of product.

Tincture of Stillingia.—Eclectic.

Stillingia, fine powder..... 3 ounces.
Diluted alcohol..... q. s.

Extract the drug by percolation so as to obtain 16 fluid ounces of product.

Tincture of Strychnine.

(Brit. Pharm.)

Strychnine (alkaloid).....12 grains.
Alcohol ..... 4 fl. ounces.

Agitate occasionally until dissolved.

Tincture of Strychnine, Co.—Eclectic.

Strychnine (alkaloid)...16 grains.
Acetic acid..... 4 fl. drams.
Comp. tinct. cardamom. 4 fl. drams.
Water ..... 7½ fl. ounces.
Alcohol ..... 7½ fl. ounces.

Dissolve the strychnine in the alcohol and acetic acid, add the remaining ingredients and filter.

Tincture of Sulphur.

(Hager.)

Washed sulphur .....290 grains.
Alcohol, 188 per cent..... 16 fl. ounces.

Mix; macerate for 4 days, agitating occasionally, and filter.

Tincture of Sulphur—Homeopathic.

Washed sulphur ..... 1½ ounces.
Alcohol, 188 per cent....16 fl. ounces.

Mix; macerate for 8 days, shaking twice a day, decanting the clear liquid, and filtering. This is considered equal to the first centesimal potency.

Tincture of Valerian Ethereal.

(Germ. Pharm.)

Valerian in powder..... 2½ ounces.
Spirit of ether..... q. s.

Mix the drug with 15 fluid ounces of spirit; macerate for 7 days, agitating occasionally, express, add enough spirit of ether to make 15 fluid ounces, and filter.

Tincture of Veratri Viridis.

(Tincture of American Hellebore.)

American hellebore in 60 powder .....14½ ounces.
Alcohol, q. s. to make..... 2 pints.

Moisten the powder with 5 ounces of alcohol and macerate for 24 hours. Percolate with menstruum until 2 pints of tincture are obtained.

Compound Tincture of Viburnum.

Cramp bark..... 2 ounces.
Cassia bark..... 1 ounce.
Skull cap .....½ ounce.
Wild yam .....½ ounce.
Cloves .....¼ ounce.

Grind together to fine powder and percolate with a menstruum consisting of alcohol, 2 parts; water, 1 part, and glycerin, 1 part; first moistening, packing and macerating in the usual way. The product should measure 16 fluid ounces.

Tincture of Wahoo.

(Brit. Form.)

(Tincture of Euonymus.)

Wahoo bark, powdered.....3¼ ounces.
Alcohol, 188 per cent..... q. s.

Extract the drug by percolation so as to obtain 16 fluid ounces of tincture.

Tincture of Witch Hazel Bark.

(Brit. Pharm.)

Hamamelis bark, No. 20 powder ..... 1¾ ounces.
Diluted alcohol, enough to make.....16 fl. ounces.

Extract the drug by percolation.

Tincture of Wormwood.

(Ger. Phar.)

(Tincture of Absinthe.)

Wormwood ..... 3 ounces.
Water ..... 3½ fl. ounces.
Alcohol, 188 per cent....12½ fl. ounces.

Mix; macerate for 7 days, agitating occasionally, express, and filter.

Tincture of Wormwood, Co.

(Bitter Stomach Drops.)

Wormwood .....520 grains.
Blessed thistle.....130 grains.
Galangal root.....130 grains.
Orange berries.....130 grains.
Diluted alcohol..... q. s.

Mix the drugs, reduce to powder, and extract by percolation with diluted alcohol so as to obtain 16 fluid ounces of tincture.

Solution of Aloes and Soda.

(Mettauer's Aperient.)

Aloes socotrine ..... 5 drams.
Soda bicarb..... 1½ ounces.
Tincture of lavender co... ¾ ounce.
Water q. s. to make.....16 ounces.

Macerate the drugs in the water for 2 weeks; filter and add the tincture of lavender co.

Solution of Arsenious Acid.

(Solution Chloride of Arsenic.)

Arsenious acid in small pieces ..... 74 grains.
Hydrochloric acid.....135 minims.
Distilled water sufficient to make..... 1 pint.

Boil the arsenious acid with the hydrochloric acid, mixed with 4 fl. ounces of distilled water until it is dissolved. Filter the liquid and pass enough distilled water through the filter to make the solution measure one pint.

The medical properties of this solution are the same as Fowler's solution. The dose is from two to eight minims.

Solution of Acetate of Ammonium.

(Spirit of mindererus.)

Diluted acetic acid..... 1 pint.
Carbonate of ammonia..... q. s.

Add a sufficient quantity of carbonate of ammonia to the diluted acetic acid, until it is neutralized. This preparation should be freshly made when required for use.

Solution of acetate of ammonium may also be prepared in the following manner:

Carbonate of ammonium. 2 ounces.
Acetic acid..... 4¾ fl. ounces.
Distilled water.....27 fl. ounces.

Dissolve the carbonate of ammonium in one pint of distilled water and filter the solution. To the acetic acid add

enough distilled water to make one pint. Keep the solutions in separate, well-stopped bottles, and when solution of acetate of ammonium is to be dispensed, measure equal quantities of each solution and mix them.

Sol. of Acetate of Ammonium. Strong.

Carbonate ammonium 5 ounces.
Acetic acid.....q. s. or 13 fl. ounces.
Distilled water.....q. s.

Crush the carbonate of ammonium and add it gradually to 12 ounces of the acetic acid; then add more of the acid until a neutral solution results. To this add sufficient water to make 16 fluid ounces.

Solution of Citrate Bismuth and Ammonium.

(Br.)

Citrate bismuth.....800 grains.
Solution of ammonia..... q. s.
Distilled water..... q. s.

Rub the citrate of bismuth to a paste with a little distilled water; add the solution of ammonia gradually, and with stirring until the salt is just dissolved. Dilute with distilled water to form one pint.

Solution of Magnesium Citrate. A

Carbonate of magnesium.200 grains.
Citric acid.....400 grains.
Syrup of citric acid..... 2 fl. ounces.
Bicarbonate of potassium
in crystals ..... 30 grains.
Water ..... q. s.

Dissolve the citric acid in 4 fluid ounces of water, and, having added the carbonate of magnesium, stir until it is dissolved. Filter the solution into a strong bottle of the capacity of 12 fluid ounces, containing the syrup of citric acid. Then add enough water, previously boiled and filtered, to nearly fill the bottle, drop in the bicarbonate of potassium, and immediately close the bottle with a cork, which must be secured with twine. Lastly, shake the mixture occasionally until the bicarbonate of potassium is dissolved.

Solution of Citrate of Magnesia. B

Citric acid, crystals.....60 grains.
Sulphate of magnesia.....½ ounce.
Simple syrup..... 3 fl. ounces.
Extract of lemon.....10 drops.
Bicarbonate of potash
(crystals) ..... 2 scruples.
Water, q. s. to make.....12 ounces.

Place the acid and epsom salts together in a 12-ounce citrate of magnesia bottle; add the simple syrup and extract of lemon; agitate for a moment and add the water; when dissolved add the bicarbonate of potash; cork the bottle and tie down with twine.

Solution of Four Chlorides.

Alum ..... 10 ounces.
Sal soda..... 10 ounces.
Sal ammoniac..... 2 ounces.
Common salt..... 2 ounces.
Chloride of zinc..... 1 ounce.
Muriatic acid, commercial. q. s.
Water, q. s. to make..... 1 gallon.

Dissolve the alum in ½ gallon of boiling water; then add the sal soda, which gives a precipitate of aluminum hydrate. Muriatic acid is then added in sufficient quantity to dissolve this precipitate, thereby forming alumium chloride. The other salts are then dissolved in the remainder of the water and added to the first solution. The advantages claimed for this preparation are cheapness, ease of preparation, odorless, non-poisonous, and its adaptability for general use. Its freedom from iron in the disinfection of clothing is an important point, in so

much that it will not injure the fabric in any way. It commends itself for the disinfection of rooms, by saturating a sheet with the diluted solution and hanging up in any convenient place.

This diluted solution may be made by mixing one pint of the concentrated solution with one gallon of water.

Solution of Hydrastis—Colorless.

(Glycerite of Hydrastis.)

Hydrastis hydrochlorate...25 grains.
Aluminum chloride.....50 grains.
Hydrochloric acid dil.....10 minims.
Water distilled..... 8 ounces.
Glycerine ..... 8 ounces.

Dissolve the salts in the water by the aid of the diluted acid; filter; then add the glycerin.

Solution of Lime.—Chlorinated.

(Br.)

Chlorinated lime.....1 pound.
Distilled water.....1 gallon.

Mix well the water and the chlorinated lime by trituration in a large mortar, and having transferred the mixture to a stoppered bottle, let it be well shaken several times for the space of three hours. Pour out now the contents of the bottle on a calico filter, and let the solution which passes through be preserved in a stoppered bottle.

Solution of Morphine Acetate. (Br.)

Acetate of morphine.... 9 grains.
Diluted acetic acid.....18 minims.
Rectified spirit..... ½ fl. ounce.
Distilled water..... 1½ fl. ounces.

Mix the acid, the spirit, and the water, and dissolve the acetate of morphine in the mixture.

Sol. of Morphine Hydrochlorate. (Br.)

Hydrochlorate of morphine ..... 9 grains.
Dil. hydrochloric acid...18 minims.
Rectified spirit..... ½ fl. ounce.
Distilled water..... 1½ fl. ounce.

Mix the hydrochloric acid, the spirit and the water, and dissolve the hydrochlorate of morphine in the mixture.

Solution of Potash.

(Br.)

Carbonate of potassium..... 1 pound.
Slaked lime, washed.....12 ounces.
Distilled water..... 1 gallon.

Dissolve the carbonate of potassium in the water; and, having heated the solution to the boiling point, in a clean iron vessel, gradually mix with it the washed slaked lime and continue the boiling for ten minutes with constant stirring. Then remove the vessel from the fire; and, when by the subsidence of the insoluble matter the supernatant liquor has become perfectly clear, transfer it by means of a siphon to a green-glass bottle furnished with an air-tight stopper, and add distilled water, if necessary, to make it correspond with the tests of sp. gr. and neutralizing. The sp. gr. is 1.058.

Wine of Beef and Iron.

Extract of beef.....256 grains.
Tincture of citro-chloride of iron..... 4¼ fl. drams.
Water, hot..... 1 fl. ounce.
Sherry wine, enough to make ..... 16 fl. ounces.

Pour the hot water on the extract of beef contained in a mortar or other suitable vessel, and triturate until a smooth mixture results. Then gradually add, while stirring, 12 fluid ounces of sherry wine. Next add the tincture and the remainder of the

wine. Transfer the mixture to a bottle, set this aside for a few days in a cold place, if convenient, filter, and pass enough sherry wine through the filter to restore the original volume.

Wine of Beef, Iron and Cinchona.

Extract of beef	256	grains.
Tincture of citro-chloride of iron	4½	fl. drams.
Quinine sulphate	16	grains.
Cinchonidine sulphate	8	grains.
Citric acid	6	grains.
Water, hot	1	fl. ounce.
Angelica wine, enough to make	16	fl. ounces.

Dissolve the citric acid and the quinine and cinchonidine sulphates in the hot water, and pour the solution upon the extract of beef contained in a mortar or other suitable vessel. Triturate the liquid with the extract, until they form a smooth mixture, then gradually add, while stirring, 12 fluid ounces of angelica wine, and afterwards the tincture of citrochloride of iron. Transfer the mixture to a bottle, set this aside for a few days in a cold place; if convenient filter, and pass through the filter, the remainder of the angelica wine.

Wine of Beef, Iron and Coca.

Extract of beef	256	grains.
Tincture of citro-chloride of iron	256	minims.
Water, hot	1	fl. ounce.
Simple syrup	1	fl. ounce.
Fluid extract of coca	10½	fl. drams.
Sherry wine, enough to make	16	fl. ounces.

Triturate the extract of beef with the water until dissolved, add 10 fluid ounces of wine, then the tincture, syrup, fluid extract, and the remainder of the wine, and filter.

Each ½ fluid ounce represents 8 grains of beef extract, 8 minims of tincture of iron, and 20 minims of coca.

Wine of Cinchona.

(Germ. Pharm.)

Yellow cinchona, coarse powder	¾	ounce.
Port wine	16	fl. ounces.

Macerate for 8 days and filter.

Wine of Cinchona Co.

(Codex).

Yellow cinchona	1¾	ounces.
Bitter orange peel	75	grains.
Chamomile flowers	75	grains.
Alcohol, 188 per cent	4½	fl. ounces.
White wine	13	fl. ounces.

Bruise the drugs, macerate in the mixed alcohol and wine for 10 days, agitating occasionally, and filter.

Wine of Cinchona and Cocoa.

Fluid extract of yellow cinchona	1	fl. ounce.
Tincture of cocoa	1	fl. ounce.
Simple syrup	2	fl. ounces.
Angelica wine	12	fl. ounces.

Mix and filter if necessary.

Wine of Creasote.

Glycerite of creasote	4	fl. ounces.
Simple syrup	2½	fl. ounces.
Water	4	fl. ounces.
White wine	5½	fl. ounces.

This contains 2½ per cent of creasote.

Wine of Creasote Co.

Creasote	2	fl. drams.
Alcohol	4	fl. drams.
Tincture of gentian	5	fl. ounces.
Sherry wine, enough to make	16	fl. ounces.

Wine of Damiana.

(Wine of Turnera.)

Fluid extract of damiana.. 3 fl. ounces.
Simple elixir..... 3 fl. ounces.
Sherry wine.....10 fl. ounces.

Mix and filter if necessary.

Wine of Golden Seal Co.

(Wine Bitters Eclectic.)

Golden seal.....20 grains.
Tulip tree bark.....20 grains.
Bitter root (dogsbane).....20 grains.
Prickly ash berries.....10 grains.
Sassafras bark.....10 grains.
Capsicum .....10 grains.
Sherry wine..... q. s.

Extract the mixed drugs in coarse powder by percolation with the wine so as to obtain 16 fluid ounces.

Wine of Iron.—Sweet.

Cinchona, powdered ... 60 grains.
Bitter orange peel, powdered ..... 30 grains.
Citric acid ..... 30 grains.
Citrate of iron soluble. 120 grains.
Water ..... 3½ fl. ounces.
Sherry wine ..... 7 fl. ounces.
Tincture of sweet orange peel ..... 3½ fl. ounces.
Simple syrup..... 14 fl.drams.

Mix the tincture with the water and with this percolate the mixed cinchona and orange peel, adding enough of the same menstruum to make 7 fluid ounces, add to this the citric acid and iron salt dissolved in the wine; then add the syrup and filter.

Wine of Iron and Quinine Citrate.

Citrate of iron and quinine ..... 48 grains.
Water, hot ..... 2 fl. ounces.
Syrup of lemon..... 2 fl. ounces.
Sherry wine, enough to make ..... 16 fl. ounces.

Dissolve the iron and quinine citrate in the water, add the other ingredients and filter if necessary.

Wine of Iron and Potassium Tartrate.

Tartrate of iron and potassium ..... 160 grains.
Water, hot ..... 4 fl. drams.
Water of ammonia ..... q. s.
Angelica wine, enough to make ..... 16 fl. ounces.

Dissolve the salt in the water, carefully neutralize the acid in the wine with ammonia water; mix the two liquids, and filter.

Wine of Orange.

Oil of orange..... 5 minims.
Alcohol, 188 per cent. 4 fl. drams.
Magnesium carbonate. 240 grains.
Simple syrup ..... 2 fl. ounces.
Sherry wine ..... 13½ fl. ounces.

Dissolve the oil in the alcohol, triturate with the magnesium carbonate, add the other ingredients and filter.

Wine of Pancreatin.

Pancreatin, pure ..... 160 grains.
Simple elixir ..... 5 fl. ounces.
Sherry wine ..... 11 fl. ounces.

Macerate the pancreatin in the elixir for 24 hours, then add the wine and filter.

Wine of Quinine.

(Brit. Pharm.)

Quinine sulphate ..... 16 grains.
Citric acid ..... 24 grains.
Orange wine ..... 16 fl. ounces.

Mix, let stand for 3 days, agitating occasionally, and filter.

Wine of Wormwood.—Codex.

(Wine of Absinthium.)

Wormwood, cut..... ½ ounce.

Alcohol, 188 per cent... 1 fl. ounce.
Sherry wine .....16 fl. ounces.
Mix, macerate for 7 days, agitating occasionally, and filter.

Elixir of Ammonium Valerianate with Cinchonidine, Iron Pyrophosphate and Quinine.

Iron pyrophosphate, soluble ..... 64 grains.
Distilled water, hot..... 4 fl. drams.
Elixir of ammonium valerianate, with cinchonidine and quinine, enough to make..... 16 fl. ounces.
Dissolve the iron salt in the water and add the elixir.

Each fluid dram contains nearly 2 grains of ammonium valerianate, ½ grain of cinchonidine sulphate, and ¼ grain of quinine hydrochlorate, as well as ½ grain of iron pyrophosphate.

Elixir of Ammonium Valerianate With Cinchonidine, Iron Pyrophosphate Quinine and Strychnine.

Strychnine sulphate ..... 1¼ grains.
Distilled water ..... 2 drams.
Elixir of ammonium valerianate, cinchonidine, iron pyrophosphate, and quinine, enough to make ..... 16 ounces.
Dissolve the strychnine salt in the water and add the elixir.

Elixir of Ammonium Valerianate With Cinchonidine and Quinine.

Quinine hydrochlorate .... 32 grains.
Cinchonidine sulphate..... 64 grains.
Elixir of ammonium valerianate, N. F., enough to make ..... 16 ounces.
Mix, dissolve by agitation and filter.
Each fluid dram contains 2 grains of ammonium valerianate, ½ grain of cinchonidine sulphate and ¼ grain of quinine hydrochlorate.

Elixir of Ammonium Valerianate With Cinchonidine, Quinine and Strychnine.

Strychnine sulphate ..... 1¼ grains.
Distilled water ..... 2 drams.
Elixir of ammonium valerianate with cinchonidine and quinine, enough to make..... 16 ounces.
Dissolve the strychnine in the water and add the elixir.

Elixir of Ammonium Valerianate With Cinchonidine and Strychnine.

Strychnine sulphate ..... 1¼ grains.
Distilled water ..... 2 drams.
Elixir of ammonium valerianate with cinchonidine, enough to make.. 16 ounces.
Dissolve the strychnine sulphate in the water, add the elixir and filter if necessary.

Each fluid dram contains 1-100 grain of strychnine sulphate, ½ grain of cinchonidine sulphate and 2 grains of ammonium valerianate.

Elixir of Ammonium Valerianate and Iron.

Iron pyrophosphate, soluble ..... 128 grains.
Distilled water, hot..... 1 ounce.
Elixir of ammonium valerianate, N. F..... 15 ounces.

Elixir of Ammonium Valerianate With Iron, Quinine and Strychnine.

Strychnine sulphate..... 1¼ grains.
Distilled water ..... 2 drams.
Elixir of ammonium valerianate with iron and quinine, enough to make ..... 16 ounces.
Dissolve the strychnine sulphate in the water and add the elixir.

Elixir of Arsenic and Quinine.

Solution of arsenious acid 10½ drams.
Quinine sulphate .....128 grains.
Simple elixir, enough to
make ..... 16 ounces.

Dissolve by agitation and filter if necessary.

Each fluid dram contains 1-20 grain of arsenious acid, and 2 grains of quinine sulphate.

Elixir of Arsenic and Strychnine.

Solution of arsenious
acid ..... 10½ fl. drams.
Strychnine sulphate .. 1¼ grains.
Simple elixir, enough to
make ..... 16 fl. ounces.

Dissolve by agitation and filter.

Each fluid dram contains 1-20 grain of arsenious acid, and 1-100 grain of strychnine sulphate.

Elixir of Beef.

Extract of beef..... 256 grains.
Distilled water ..... 1 fl. ounce.
Simple elixir, enough to
make ..... 16 fl. ounces.

Dissolve the extract in the water, add the elixir, let stand for several days if possible, and filter.

Each fluid dram contains 2 grains of extract of beef.

The extract of beef suitable for this and similar preparations is that which is prepared by Liebig's method.

Elixir Aurantii.

Oil of orange peel..... 2½ fl. drams.
Cotton .. .. ½ ounce.
Sugar, in coarse powder 25 ounces.
Alcohol .....
Water q. s. to make..... 4 pints.

Mix alcohol and water in the proportion of 1 pint of alcohol to 2½ pints of water. Add the oil of orange to the cotton, in small portions at a time; distributing it thoroughly by picking the cotton apart after each addition; then pack tightly in a conical percolator, and gradually pour on the mixture of alcohol and water, until 3¼ pints of filtered liquid are obtained. In this liquid dissolve the sugar by agitation, without heat, and strain.

Elixir of Beef and Iron.

Citrate of iron and ammonium ..... 128 grains.
Distilled water, warm... 1 fl. ounce.
Elixir of beef, enough to
make ..... 16 fl. ounces.

Dissolve the iron salt in the water and add the elixir.

Each fluid dram contains 1 grain of iron salt and 1¾ grains of extract of beef.

Elixir of Beef, Iron and Malt.

Extract of beef..... 256 grains.
Extract of malt (thick) 4 av. ounces.
Citrate of iron and ammonium ..... 128 grains.
Spirit of orange..... 1 fl. dram.
Alcohol ..... 2 fl. ounces.
Sherry wine ..... 9 fl. ounces.
Water .....— of each
Ferric hydrate .....— sufficient.

Dissolve the extract of beef in one fluid ounce of hot water, and add the alcohol containing the spirit of orange, then the wine with which the malt extract has previously been mixed; shake frequently during 2 or 3 days, filter and wash the filter with a mixture of alcohol and water in the proportion of 1 of the former to 4 of the latter by measure, so as to obtain a filtrate of 15 fluid ounces. Dissolve the iron salt in 6 fluid drams of water, add to the filtrate, and then add enough water to make 16 fluid ounces.

The ferric hydrate may be prepared as described under the heading of

elixir of gentian; the amount to be used must be sufficient to detannate the mixture, and if an insufficient amount has been used, more must be added, allowing to stand for several days more. The test to be applied is the usual one—filtering a small amount of liquid and testing the filtrate with solution of iron chloride to note if any discoloration occur.

Elixir of Berberine.

Berberine phosphate .... 32 grains.
Distilled water, hot..... 1 fl. ounce.
Simple elixir ..... 15 fl. ounces.

Dissolve the berberine in the water and add the elixir.

Each fluid dram contains ¼ grain of berberine phosphate.

Elixir of Berberine and Iron.

Iron pyrophosphate, soluble ..... 128 grains.
Distilled water, hot..... 1 fl. ounce.
Elixir of berberine, enough to make..... 16 fl. ounces.

Dissolve the iron salt in the water, add the elixir, and filter if necessary.

Each fluid dram contains 1 grain of iron pyrophosphate and nearly ¼ grain of berberine phosphate.

Elixir of Bismuth.

Bismuth subnitrate ..... 180 grains.
Nitric acid, C. P..... 3 fl. drams.
Tartaric acid .....— of each
Sodium bicarbonate, C. P.....
Distilled water .....— sufficient.
Simple elixir, enough to make ..... 16 fl. ounces.

Mix 3 fluid drams of nitric acid with an equal measure of distilled water, and to this add the bismuth subnitrate, stirring until solution is effected; add enough distilled water to make 3 fluid ounces. Now dissolve 135 grains of tartaric acid in 12 fluid drams of distilled water, and pour this into the bismuth solution, stirring constantly during mixing. To this mixture gradually add 150 grains of sodium bicarbonate, stirring constantly during mixing. Dilute the magma thus obtained with 5 fluid ounces of distilled water, and after the elapse of several hours, pour the whole upon a plain filter; allow the liquid to drain, and wash the precipitate with distilled water until the washings pass tasteless.

Now mix 150 grains of sodium bicarbonate with 1 fluid ounce of distilled water, and add 135 grains of tartaric acid gradually, with constant stirring. When reaction has ceased, and a clear solution has formed, add the washed precipitate of bismuth tartrate and stir until it is dissolved. Now add enough distilled water to make 3 fluid ounces and then the elixir. Allow to stand for 24 hours and filter.

The 3 fluid ounces of solution to which elixir is added is a solution of tartrate of bismuth and sodium, and may be used to advantage, instead of citrate of bismuth and ammonium, in all preparations containing a soluble compound of bismuth.

Each of the elixirs of bismuth contains about 2 grains of the respective bismuth salt.

Elixir of Bismuth and Cinchona.

Citrate of bismuth and ammonium ..... 128 grains.
Distilled water, hot..... 4 fl. drams.
Ammonia water ..... sufficient.
Detannated elixir of cinchona, N. F., enough to make ..... 16 fl. ounces.

Mix the bismuth salt with the hot water, allow the solution to stand to permit any undissolved matter to subside; decant the clear liquid and add to the residue just enough ammonia

water to dissolve. Mix this solution with the decanted liquid, and if alkaline, neutralize the mixture with dilute solution of citric acid gradually added. To the whole add the elixir of cinchona, let stand 24 hours, and filter if necessary.

Each fluid dram contains 1 grain of bismuth salt and represents 1½ grains of calisaya.

Elixir of Bismuth, Cinchona, Iron and Pepsin.

Citrate of bismuth and ammonium	128	grains.
Detannated tincture of cinchona	2½	fl. ounces.
Iron pyrophosphate, soluble	256	grains.
Pepsin, pure	128	grains.
Distilled water, hot	1½	fl. ounces.
Aromatic spirit	1	fl. ounce.
Simple syrup	5	fl. ounces.
Simple elixir, enough to make	16	fl. ounces.
Water of ammonia	sufficient.	

Add the bismuth salt to 4 fluid drams of the water, triturate well for a moment, allow to stand until the insoluble portion subsides, decant the clear liquid, carefully add to the residue just sufficient ammonia water to dissolve it, carefully avoiding any excess, and mix this solution with the decanted portion.

Add the pepsin to 5 fluid ounces of simple elixir and agitate occasionally until dissolved; also dissolve the iron salt in the remainder of the water.

Now mix the three liquids, add the tincture, the spirit, syrup, and the remainder of the elixir, allow to stand for 24 hours, and filter.

Each fluid dram represents 1 grain each of citrate of bismuth and ammonium and of pepsin, nearly 2 grains of cinchona, and 2 grains of iron pyrophosphate.

Elixir of Bismuth, Cinchona, Iron, Pepsin and Strychnine.

Strychnine sulphate	1¼	grains.
Distilled water	4	fl. drams.
Elixir of bismuth, cinchona, iron and pepsin	15½	fl. ounces.

Dissolve the strychnine sulphate in the water, add the elixir and filter.

Elixir of Bismuth, Cinchona and Pepsin.

Detannated tincture of cinchona	2½	fl. ounces.
Citrate of bismuth and ammonium	128	grains.
Pepsin, pure	128	grains.
Distilled water, hot	4	fl. drams.
Aromatic spirit	1	fl. ounce.
Water of ammonia	sufficient.	
Simple elixir, enough to make	16	fl. ounces.

Triturate the citrate of bismuth and ammonium with the water, allow to stand until the insoluble matter subsides, to the residue add ammonia water until solution takes place, carefully avoiding any excess, and mix the two liquids. Add the pepsin to 7 fluid ounces of elixir, agitate occasionally until dissolved; mix this with the preceding liquid, add the tincture, spirit, syrup and remainder of the elixir, allow to stand for 24 hours, and filter.

Each fluid dram represents nearly 2 grains of cinchona, and contains 1 grain each of pepsin, and of citrate of bismuth and ammonium.

Elixir of Bismuth and Gentian.

Citrate of bismuth and ammonium	128	grains.
Distilled water, hot	4	fl. drams.

Ammonia water ..... sufficient.
Elixir of gentian, N. F.,
enough to make..... 16 fl. ounces.

Treat the bismuth salt as described under elixir of bismuth and cinchona, add the elixir of gentian, allow to stand for 24 hours, and filter if necessary.

Each fluid dram contains 1 grain of bismuth salt and represents about 2 grains of gentian.

Elixir of Bismuth, Gentian and Iron.

Citrate of bismuth and
ammonium ..... 128 grains.
Distilled water, hot..... 4 fl. drams.
Ammonia water ..... sufficient.
Elixir of gentian and
iron phosphate, enough
to make ..... 16 fl. ounces.

Treat the bismuth salt as in the preceding elixir, add the elixir of gentian and iron, let stand 24 hours, and filter if necessary.

Each fluid dram contains 1 grain of bismuth salt and nearly 1 grain of iron phosphate, and represents about 1½ grains of gentian.

Elixir of Bismuth, Gentian, Iron and Strychnine.

Strychnine sulphate... 1¼ grains.
Distilled water ..... 4 fl. drams.
Elixir of bismuth, gen-
tian and iron, enough
to make ..... 16 fl. ounces.

Dissolve the strychnine in the water, add the elixir, let stand a few hours, and filter.

Each fluid dram contains 1-100 grain of strychnine sulphate, nearly 1 grain of bismuth salt and nearly 1 grain of iron phosphate and represents about 1½ grains of gentian.

Elixir of Bismuth, Gentian and Strychnine.

Strychnine sulphate .. 1¼ grains.
Distilled water ..... 4 fl. drams.
Elixir of bismuth and
gentian, enough to
make ..... 16 fl. ounces.

Dissolve the strychnine in the water, add the elixir, let stand a few hours, and filter.

Each fluid dram contains 1-100 grain of strychnine sulphate, and nearly 1 grain of bismuth salt and represents about 1½ grains of gentian.

Elixir of Bismuth, Golden Seal and Iron.

Iron pyrophosphate, sol-
uble ..... 128 grains.
Glycerite of hydrastis.. 1 fl. ounce.
Distilled water, hot.... 4 fl. drams.
Elixir of bismuth,
enough to make..... 16 fl. ounces.

Dissolve the iron salt in the water, and the glycerite and elixir, let stand for a day or two, and filter. The elixir must be perfectly neutral.

Each fluid dram contains 1 grain of iron pyrophosphate, and nearly 2 grains of bismuth salt and represents 3¾ grains of hydrastis.

Elixir of Bismuth and Golden Seal.

(Elixir of Bismuth and Hydrastis.)
Glycerite of hydrastis... 1 fl. ounce.
Elixir of bismuth..... 15 fl. ounces.

Mix, let stand for several days if possible, and filter. The elixir of bismuth must be exactly neutral before adding the glycerite.

Each fluid dram represents 3¾ grains of hydrastis and contains nearly 2 grains of citrate of bismuth and ammonium.

Elixir Bismuth and Iron.

Iron pyrophosphate, soluble ..... 128 grains.
Distilled water, hot..... 4 fl. drams.
Elixir of bismuth..... 8 fl. ounces.
Simple elixir, enough to make ..... 16 fl. ounces

Dissolve the iron salt in water and add the elixirs.

Each fluid dram contains 1 grain each of iron pyrophosphate and bismuth salt.

Elixir of Bismuth, Iron and Pepsin.

Citrate of bismuth and ammonium ..... 128 grains.
Iron pyrophosphate .... 128 grains.
Pepsin, pure ..... 128 grains.
Distilled water, hot.... 1 fl. ounce.
Water of ammonia ..... sufficient.
Simple elixir, enough to make ..... 16 fl. ounces.

Triturate the bismuth with 4 fluid drams of water, allow the insoluble matter to subside, decant the clear liquid, to the residue add gradually ammonia water until solution occurs, carefully avoiding any excess, and mix this with the decanted portion. Dissolve the iron pyrophosphate in the remainder of the water; also dissolve the pepsin in 12 fluid ounces of elixir by frequent agitation. Mix the three liquids, add the remainder of the elixir and filter.

Each fluid dram contains 1 grain each of iron pyrophosphate, pepsin, and citrate of bismuth and ammonium.

Elixir of Bismuth, Iron, Pepsin and Quinine.

Quinine hydrochlorate .. 32 grains.
Elixir of bismuth, iron and pepsin ..... 16 fl. ounces.

Mix, dissolve by agitation, and filter, if necessary.

Each fluid dram contains 1 grain each of pepsin, iron pyrophosphate and citrate of bismuth and ammonium and ¼ grain of quinine hydrochlorate.

Elixir of Bismuth, Iron and Strychnine.

Iron pyrophosphate, soluble ..... 128 grains.
Strychnine sulphate . 1¼ grains.
Distilled water ..... 1 fl. ounce.
Elixir of bismuth .... 8 fl. ounces.
Simple elixir, enough to make ..... 16 fl. ounces.

Dissolve the iron salt and strychnine salt separately in 4 fluid drams of the water; add the two elixirs, and filter if necessary. The elixir of bismuth must be perfectly neutral.

Each fluid dram contains 1-100 grain of strychnine sulphate and 1 grain each of iron pyrophosphate and bismuth salt.

Elixir of Bismuth, Nux Vomica and Pepsin.

Tincture of nux vomica 5½ fl. drams.
Elixir of pepsin and bismuth, N. F., enough to make .....16 fl. ounces.

Each fluid dram contains 1 grain each of pepsin and 2 grains of citrate of bismuth and ammonium and represents about ½ grain of nux vomica.

Elixir of Bismuth and Pancreatin.

Citrate of bismuth and ammonium ..... 128 grains.
Pancreatin, pure ..... 128 grains.
Distilled water ..... 1 fl. ounce.
Water of ammonia ..... sufficient.
Tincture of cudbear.... 2 fl. drams.
Simple elixir, enough to make ..... 16 fl. ounces.

Triturate the bismuth salt with the water, allow the insoluble portion to subside, decant the clear liquid, add

sufficient ammonia water to dissolve the residue, add this solution and the decanted portion to 12 fluid ounces of elixir mixed with the tincture, then add the pancreatin, agitate occasionally until the latter is apparently dissolved, filter in a well-covered funnel, and add enough elixir through the filter to make the filtrate measure 16 fluid ounces.

Each fluid dram contains 1 grain each of pancreatin and citrate of bismuth and ammonium.

Elixir of Bismuth, Pepsin and Quinine.

Quinine hydrochlorate .. 32 grains.
Elixir of pepsin and bismuth, N. F..... 16 fl. ounces.

Mix and dissolve by agitation.

Each fluid dram contains ¼ grain of quinine, hydrochlorate of pepsin, and 2 grains of citrate of bismuth and ammonium.

Elixir of Bismuth and Quinine.

Quinine hydrochlorate... 32 grains.
Elixir of bismuth, enough to make..... 16 fl. ounces.

Dissolve the quinine salt in the elixir (which should be neutral) by agitation and filter, if necessary.

Each fluid dram contains 1 grain of quinine hydrochlorate and 2 grains of bismuth salt.

Elixir of Bismuth and Strychnine.

Strychnine sulphate... 1¼ grains.
Distilled water ..... 4 fl. drams.
Elixir of bismuth..... 15½ fl. ounces.

Dissolve the alkaloidal salt in the water and add to the elixir, which latter should be neutral.

Each fluid dram contains 1-100 grain of strychnine sulphate and nearly 2 grains of bismuth salt.

Elixir, Bitter.
(Elixir Amarum.)
Germ. Pharm.

Extract of wormwood.. 3¼ av. ounces.
Oleosaccharate of peppermint ..... 1¾ av. ounces.
Aromatic tincture, N. F. ..... 1¾ fl. ounces.
Bitter tincture, N. F.. 1¾ fl. ounces.
Water ..... 8½ fl. ounces.

Triturate the extract and oleosaccharate with the water to a smooth condition and add the other ingredients. This preparation should be cloudy and of a dark brown color.

Elixir of Blackberry.

Fluid extract of rubus... 2 fl. ounces.
Tincture of vanilla ..... 4 fl. drams.
Compound elixir of taraxacum ..... 4 fl. ounces.
Simple elixir, enough to make ..... 16 fl. ounces.

Each fluid dram represents 172 grains of blackberry root bark.

Elixir of Black Haw.
(Elixir of Viburnum Prunifolium.)

Fluid extract of black haw ..... 2 fl. ounces.
Compound tincture of cardamom ..... 9½ fl. drams.
Aromatic elixir, enough make ..... 16 fl. ounces.

Mix, allow the mixture to stand a few days, if convenient, and filter.

Elixir of Black Cohosh.
(Elixir of Cimicifuga.)

Fluid extract of black cohosh ..... 4 fl. ounces.
Alcohol ..... 1 fl. ounce.
Simple elixir ..... 11 fl. ounces.

Mix, let stand 24 hours, and filter through purified talcum.

Each fluid dram represents 7½ grains of cimicifuga.

Elixir of Black Haw, Compound.

(Compound Elixir of Viburnum Prunifolium.)

Fluid extract of black haw ..... 2 fl. ounces.
Fluid extract of hydrastis 2 fl. ounces.
Fluid extract of Jamaica dogwood ..... 1 fl. ounce.
Simple elixir ..... 11 fl. ounces.

Mix, allow to stand for 24 hours and filter.

Each fluid dram represents 7½ grains each of black haw and golden seal and 3¾ grains of Jamaica dogwood.

Elixir of Blue Flag.

Fluid extract of blue flag ..... 4 fl. ounces.
Alcohol ..... 1 fl. ounce.
Simple elixir ..... 11 fl. ounces.

Mix, allow to stand for 24 hours, and filter.

Each fluid dram represents 15 grains of blue flag.

Elixir of Blue Flag and Wahoo.

Fluid extract of blue flag ..... 2¾ fl. ounces.
Fluid extract of wahoo. 2¾ fl. ounces.
Alcohol ..... ½ fl. ounce.
Simple elixir ..... 10 fl. ounces.

Mix, allow to stand for 24 hours and filter, through talcum.

Each fluid dram represents about 10 grains each of blue flag and wahoo.

Elixir of Three (or Triple) Bromides.

Potassium bromide .... 128 grains.
Sodium bromide ..... 128 grains.
Elixir of caffeine, enough to make ..... 16 fl. ounces.

Mix, dissolve by agitation, and filter, if necessary.

Each fluid dram contains 8 grains of each of the bromides of potassium, sodium, and caffeine.

Elixir of Six Bromides.

Potassium bromide .... 640 grains.
Sodium bromide ..... 640 grains.
Ammonium bromide.... 384 grains.
Calcium bromide ..... 192 grains.
Lithium bromide ..... 64 grains.
Iron bromide ..... 64 grains.
Compound tincture of cudbear ..... 2 fl. drams.
Simple elixir, enough to make ..... 16 fl. ounces.

Dissolve by agitation and filter, if necessary.

Each fluid dram contains 5 grains each of potassium and sodium bromides, 3 grains of ammonium bromide, 1½ grains of calcium bromide, and 1 grain each of lithium and iron bromides.

Elixir of Bromide of Zinc.

Zinc. bromide ..... 128 grains.
Citric acid ..... 3 grains.
Simple elixir ..... 16 fl. ounces.

Dissolve by agitation and filter, if necessary.

Each fluid dram contains 1 grain of zinc bromide.

Elixir of Buchu and Juniper, Compound.

(Rheumatic Elixir.)

Fluid extract of buchu. 6½ fl. drams.
Fluid extract of barberry bark ..... 3¼ fl. drams.
Fluid extract of juniper berries ..... 3¼ fl. drams.
Sodium salicylate .....160 grains.
Simple syrup ..... 1 fl. ounce.
Alcohol ..... 1 fl. ounce.
Simple elixir enough to make ..... 16 fl. ounces.

Mix all, let stand for 24 hours, and filter through purified talcum.

Each fluid dram contains 1¼ grains of sodium salicylate, and represents 3

grains of buchu, and 1½ grains each of barberry bark and juniper berries.

Elixir of Buchu, Juniper and Potassium Acetate.

Fluid extract of buchu..	12 fl. drams.
Fluid extract of juniper berries	4 fl. drams.
Potassium acetate	192 grains.
Alcohol	1 fl. ounce.
Simple syrup	1 fl. ounce.
Simple elixir	12 fl. ounces.

Mix, allow to stand for 24 hours and filter through talcum.

Each fluid dram contains 1½ grains of potassium acetate, and represents about 5½ grains of buchu, and 2 grains of juniper berries.

Elixir of Buchu, Juniper, Uva Ursi and Potassium Acetate.

Fluid extract of buchu..	2 fl.ounces.
Fluid extract of uva ursi	11 fl. drams.
Fluid extract of juniper berries	5½ fl. drams.
Potassium acetate	1½ av.ounces.
Alcohol	1 fl. ounce.
Simple syrup ....|....	1 fl. ounce.
Simple elixir, enough to make	16 fl. ounces.

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluid dram contains 5 grains of potassium acetate, and represents 7½ grains of buchu, 5 grains of uva ursi, and 2½ of juniper berries.

Elixir of Buchu and Pareira.

Fluid extract of buchu..	2 fl. ounces.
Fluid extract of pareira brava	2 fl. ounces.
Alcohol	1 fl. ounce.
Simple syrup	1 fl. ounce.
Simple elixir	10 fl. ounces.

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluid dram represents 7½ grains each of buchu and pareira brava.

Elixir of Buchu and Pareira, Compound.

Fluid extract of buchu..	8 fl. drams.
Fluid extract of juniper berries	4 fl. drams.
Fluid extract of pareira brava	2 fl. drams.
Fluid extract of stone-root	2 fl. drams.
Alcohol	1 fl. ounce.
Simple syrup	1 fl. ounce.
Simple elixir	12 fl. ounces.

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluid dram represents about 4 grains of buchu, 2 grains of juniper berries, and 1 grain each of pareira brava and collinsonia.

Elixir of Buckthorn and Senna.

Fluid extract of frangula.	2 fl. ounces.
Elixir of senna	14 fl. ounces.

Each fluid dram represents 7½ grains of buckthorn bark, and 26 grains of senna.

Elixir of Calcium and Sodium Hypophosphites with Malt.

Calcium hypophosphite..	128 grains.
Sodium hypophosphite..	128 grains.
Adjuvant elixir	8 fl. ounces.
Fluid extract of malt, N. F.	8 fl. ounces.

Dissolve the salts in the elixir by trituration, filter, and add the malt extract.

Each fluid dram contains 1 grain each of the hypophosphites of calcium and sodium.

Elixir of Calcium and Sodium Hypophosphites with Tar.

Calcium hypophosphite..	128 grains.
Sodium hypophosphite..	128 grains.

Distilled water, hot..... 2 fl. ounces.
Elixir of tar, enough to
make ..... 16 fl. ounces.

Dissolve the salts in the water, add the elixir, and filter.

Each fluid dram contains 1 grain each of the hypophosphites.

Elixir of Calcium Bromide With Iodides.

Calcium bromide .... 256 grains.
Sodium iodide ..... 256 grains.
Potassium iodide .... 256 grains.
Magnesium chloride .. 256 grains.
Compound fluid extract
of sarsaparilla ..... 2 fl. ounces.
Compound fluid extract
of stillinga ..... 2 fl. ounces.
Aromatic elixir ..... 4 fl. ounces.
Sugar ..... 2½ ounces.
Water, enough to make 16 fl. ounces.

Dissolve the salts in the water, add the sugar, and to this syrup add the fluid extracts previously mixed with the aromatic elixir; after standing for 2 days, filter, and add the remainder of the water.

Elixir of Calcium Lactophosphate and Cinchona.

Detannated elixir of cinchona ..... 8 fl. ounces.
Elixir of calcium lactophosphate ..... 8 fl. ounces.

Elixir of Calcium Phosphate.

Calcium phosphate .... 640 grains.
Hydrochloric acid, concentrated ..... 5 fl. drams.
Water ..... 1 fl. ounce.
Tincture of cudbear..... 2 fl. drams.
Simple elixir, enough to
make ..... 16 fl. ounces.

Mix the calcium phosphate with the water, add the acid, dissolve, add the elixir, and then the tincture.

Each fluid dram contains 5 grains of calcium phosphate.

Elixir of Cascara Sagrada with Sodium Salicylate.

Elixir of cascara sagrada ..... 5 fl. ounces.
Sodium salicylate ..... 2½ ounces av.
Simple elixir, enough to
make ..... 16 fl. ounces.

Mix, dissolve by shaking, and filter if necessary.

Each fluid dram represents approximately 2 grains cascara sagrada, and contains very nearly 1 grain of sodium salicylate.

Elixir, Castillon's.

Cinchona, coarsely powd...160 grains.
Gentian, coarsely powd.....160 grains.
Ipecac, coarsely powd..... 80 grains.
Columbo, coarsely powd... 80 grains.
Cinnamon, coarsely powd.. 20 grains.
Aqueous extract of opium. 20 grains.
Diluted alcohol ..... sufficient.

Macerate the drugs with 16 fluid ounces of diluted alcohol for 7 days and filter, adding enough menstruum through the filter to make up 16 fluid ounces of filtrate.

Elixir of Celery and Guarana.

Fluid extract of celery seed ..... 2 fl. ounces.
Fluid extract of guarana. 2 fl. ounces.
Aromatic elixir ..... 12 fl. ounces.

Mix, allow to stand for 24 hours, and filter through talcum.

Each fluid dram represents 7½ grains each of celery and guarana.

Elixir of Cherries.

(Elixir Cerasorum.)

Ripe, sour cherries, free from stems ..... 8 ounces av.
Alcohol ..... 2 fl. ounces.

Glycerin ..... 1 fl. ounce.
Simple syrup .....sufficient.

Crush the cherries and stones to a pulp, add the alcohol and glycerin, macerate for 7 days, press and filter, and to the filtrate add simple syrup enough to make 16 fluid ounces.

Elixir of Cherries with Calcium and Sodium Hypophosphites.

Calcium hypophosphite . 128 grains.
Sodium hypophosphite . 128 grains.
Elixir of cherries, enough to make ..... 16 fl. ounces.

Triturate the two salts to fine powder, add to the elixir, dissolve by agitation, and filter.

Each fluid dram contains 1 grain each of sodium and calcium hypophosphites.

Elixir of Chloral Hydrate.

Chloral hydrate, crystal. 640 grains.
Simple elixir, enough to make ..... 16 fl. ounces.

Mix, dissolve by agitation, and filter, if necessary.

Each fluid dram contains 5 grains of chloral hydrate.

Elixir of Chirata.

Tincture of chirata..... 4 fl. ounces.
Simple elixir ..... 12 fl. ounces.

Each fluid dram represents 1½ grains of chirata.

Elixir of Chlorides of Arsenic and Iron.

(Elixir of Two Chlorides.)

Solution of arsenious acid ..... 10½ fl. drams.
Tincture of citrochloride of iron ..... 5¼ fl. drams.
Simple elixir ..... 14 fl. ounces.

Each fluid dram contains 1-20 grain of arsenious acid (as so-called "chloride of arsenic") and about ¼ grain of iron chloride.

Elixir of Chlorides of Arsenic, Iron and Mercury.

(Elixir of Three Chlorides.)

Solution of protochloride of iron, N. F..... 48 minims.
Mercuric chloride..... 1 grain.
Solution of arsenious acid ..... 50 minims.
Compound elixir of quinine, N. F., enough to make ..... 16 fl. ounces.

Mix, dissolve, and filter.

Each fluid dram contains ⅛ grain of iron protochloride, 1-128 grain of mercuric chloride and 1-256 grain of arsenious acid (as so-called "chloride of arsenic").

Elixir of Four Chlorides.

(Four Chlorides.)

Mercuric chloride ..... 2 grains.
Solution of arsenic .... 5½ fl. drams.
Tincture of ferric chloride ..... 2 fl. ounces.
Hydrochloric acid, diluted .....11 fl. drams.
Syrup of ginger ..... 4 fl. ounces.
Water, enough to make.16 fl. ounces.

Mix, dissolve, and filter, if necessary.

Each fluid dram contains about 1-40 grain of arsenious acid (as so-called "chloride of arsenic"), 1-64 grain of mercuric chloride, about ¾ grain of ferric chloride, and about 5 minims of diluted hydrochloric acid.

Elixir of Cinchona Detannated.

Yellow cinchona ..... 480 grains.
Saigon cassia ..... 80 grains.
Coriander ..... 80 grains.
Nutmeg ..... 20 grains.
Star anise ..... 20 grains.
Sugar ..... 10 av. ounces.
Alcohol .....— of each
Water .....— sufficient.
Spirit of orange ..... 2 fl. drams.
Purified talcum ..... 120 grains

Reduce the cinchona, cassia, coriander, nutmeg, and anise to a moderately fine powder, and extract by percolation with a mixture of alcohol and water, in the proportion of 1 by measure of the former to 3 of the latter, until 22 fluid ounces of percolate are obtained. Now beat the white of 1 egg with a portion of the percolate, add the remainder of the percolate, and set aside for 24 hours, agitating occasionally. Test at the end of the specified period of time with solution of ferric chloride and if discoloration occurs, the white of another egg may be added as before, allowing to stand 24 hours, then filtering. Wash the filter with a liquid similar to the menstruum used until 25 fluid ounces of filtrate are obtained. To this add the spirit of orange and purified talcum, filter; to the filtrate add the sugar, dissolve by agitation, and strain, or filter, if necessary.

Each fluid dram represents about 1¾ grains of cinchona.

Elixir of Cinchona, Compound.

(Elixir of Cinchona and Coca.)

Fluid extract of cinchona	10	fl. drams.
Fluid extract of coca	10	fl. drams.
Tincture of cacao	2½	fl. ounces.
Simple elixir	11	fl. ounces.

Mix, and filter, if necessary.

Each fluid dram represents about 4½ each of the hypophosphites of calcium grains of cinchona and coca.

Elixir of Cinchona, Gentian and Iron Malate.

Malate of iron ("scales")	128 grains.
Extract of gentian	35 grains.
Simple syrup	4 fl. ounces.
Elixir of cinchona	6 fl. ounces.
Tincture of vanilla	2 fl. drams.
Oil of cinnamon	1 drop.
Water, hot	1 fl. ounce.
Aromatic elixir, enough to make	16 fl. ounces.

Dissolve the iron salt and extract in the water, add the other ingredients and filter.

Each fluid dram represents about 1 grain of gentian and ½ grain of cinchona, and contains 1 grain of iron malate.

The malate of iron to be used should not be the ferrated extract of apples, but the pure malate of iron which appears in the scale form.

Elixir of Cinchona and "Protoxide" of Iron.

Solution of "protoxide" of iron	1½ fl. ounces.
Glycerin	1½ fl. ounces.
Elixir of cinchona, N. F.	13 fl. ounces.

Mix the solution and the glycerin and add the elixir.

Elixir of Cinchona, Iron and Phosphorous.

Spirit of phosphorus	7½ fl. drams.
Elixir of cinchona and iron, enough to make	16 fl. ounces.

Each fluid dram contains 1-200 grain of phosphorus, 2 grains of iron phosphate, and represents nearly 2 grains of cinchona.

Elixir of Cinchona and Pepsin. A

Quinine sulphate	16 grains.
Cinchonine sulphate	8 grains.
Elixir of pepsin	16 fl. ounces.

Dissolve the alkaloidal salts in the elixir and filter if necessary.

Elixir of Cinchona and Pepsin. B

Pure pepsin ..... 128 grains.
Hydrochloric acid ..... ½ fl. dram.
Detannated elixir of cinchona, enough to make 16 fl. ounces.

Dissolve by agitation and filter, using purified talcum, if necessary.

Elixir of Cinchona with Phosphates. A

Syrup of calcium lactophosphate, U. S. P... 4 fl. ounces.
Syrup of iron lactophosphate ..... 2 fl. ounces.
Diluted phosphoric acid 1 fl. ounce.
Quinine sulphate ..... 32 grains.
Alcohol ..... 4 fl. ounces.
Spirit of orange..... 4 fl. drams.
Water ..... 4½ fl. ounces.

Dissolve the quinine salt in the alcohol previously mixed with the acid and spirit, pour this solution into the syrups previously mixed with the water, allow to stand for 2 days, and filter.

Elixir of Cinchona with Phosphates. B

Elixir of cinchona..... 8 fl. ounces.
Compound syrup of phosphates ..... 8 fl. ounces.

The elixir of cinchona, iron and calcium lactophosphate, N. F., may be dispensed under the above title.

Elixir of Cinchona and Strychnine.

Strychnine sulphate .. 1¼ grains.
Detannated elixir of cinchona ..... 16 fl. ounces.

Dissolve by agitation.

Each fluid dram contains 1-100 grain of strychnine sulphate, and represents nearly 2 grains of cinchona.

Elixir of Cinchonidine.

Cinchonidine sulphate .. 128 grains.
Simple elixir ..... 16 fl. ounces.

Dissolve by agitation, and filter, if necessary.

Each fluid dram contains 1 grain of cinchonidine sulphate.

Elixir of Cinchonidine and Iron.

Iron pyrophosphate, soluble ..... 256 grains.
Cinchonidine sulphate.. 128 grains.
Distilled water, hot..... 6 fl. drams.
Simple elixir ..... 15 fl. ounces.

Dissolve the iron pyrophosphate in the water, and the cinchonidine in the elixir; mix the two solutions and filter if necessary.

Each fluid dram contains 1 grain of cinchonidine sulphate and 2 grains of iron pyrophosphate.

Elixir of Cinchonidine, Iron and Strychnine.

Make this either by adding 1¼ grains of strychnine sulphate to the preceding, or the elixir of iron phosphate, cinchonidine and strychnine may be employed.

Elixir of Coca and Phosphorus.

Spirit of phosphorus..... 15 fl. drams.
Elixir of coca, enough to to make ..... 16 fl. ounces.

Mix and filter if necessary.

Each fluid dram contains 1-100 grain of phosphorus and represents 6½ grains of coca.

Elixir of Codeine.

Codeine sulphate ..... 16 grains.
Simple elixir ..... 16 fl. ounces.
Dissolve by agitation.
Each fluid dram contains ⅛ grain of codeine sulphate.

Elixir of Corydalis, Compound.

(Alterative Elixir.)

Fluid extract of corydalis	1	fl. ounce.
Fluid extract of stillingia	1	fl. ounce.
Fluid extract of prickly ash bark	4	fl. drams.
Fluid extract of blue flag	1½	fl. ounces.
Alcohol	2	fl. ounces.
Potassium iodide	384	grains.
Aromatic elixir, enough to make	16	fl. ounces.

Mix the alcohol with the fluid extracts, dissolve the potassium iodide in the mixture, and add the aromatic elixir. Let the mixture stand a few days, if convenient, and filter.

Each fluid dram contains 3 grains of potassium iodide, and small quantities of the several fluid extracts.

Elixir of Codeine and Terpin Hydrate.

Codeine sulphate ..... 16 grains.
Terpin hydrate .....256 grains.
Simple elixir, enough to make ..... 16 fl. ounces.
Dissolve by agitation and filter if necessary.

Each fluid dram contains ⅛ grain of codeine sulphate, and 2 grains of terpin hydrate.

Elixir of Crampbark, Compound.

(Compound Elixir of Viburnum Opulus.)

Fluid extract of crampbark	10	fl. drams.
Fluid extract of trillium	2½	fl. ounces.
Fluid extract of aletris.	10	fl. drams.
Comp. elixir of taraxacum	11	fl. ounces.

Mix, allow to stand a few days, if convenient, and filter.—N. F.

Elixir of Croton Chloral Hydrate.

(Elixir of Butyl Choral Hydrate.)

Croton chloral hydrate..	256	grains.
Alcohol	1	fl. ounce.
Tincture of cacao	2	fl. ounces.
Simple elixir, enough to make	16	fl. ounces.

Dissolve the croton chloral in the alcohol, add the tincture and elixir, and filter, if necessary.

Each fluid dram contains 2 grains of croton chloral hydrate.

Elixir of Croton Chloral Hydrate and Quinine.

Quinine sulphate ..... 128 grains.
Elixir of croton chloral hydrate ..... 16 fl. ounces.
Reduce the quinine salt to fine powder, add the elixir, dissolve by agitation, and filter, if necessary.

Each fluid dram contains 1 grain of quinine sulphate and 2 grains of croton chloral hydrate.

Elixir of Damiana, Iron, Nux Vomica and Phosphorus.

Fluid extract of damiana	2	fl. ounces.
Tincture of nux vomica	10½	fl. drams.
Iron pyrophosphate, soluble	128	grains.
Elixir of phosphorus	4	fl. ounces.
Alcohol	2	fl. ounces.
Distilled water, hot	4	fl. drams.
Simple elixir, enough to make	16	fl. ounces.

Mix the fluid extract, tincture, elixir of phosphorus, alcohol, and 6 fluid ounces of simple elixir, also dissolve the iron salt in the water, mix the two liquids, add the remainder of the simple elixir, and filter, if necessary, in a well-covered funnel.

Each fluid dram represents 7½ grains of damiana and about 1 grain of nux vomica, and contains 1-200 grain of phosphorus and 1 grain of iron pyrophosphate.

Elixir of Damiana, Iron and Phosphorus.

Fluid extract of damiana	2	fl. ounces.
Elixir of phosphorus	4	fl. ounces.
Iron pyrophosphate, soluble	128	grains.
Alcohol	1	fl. ounce.
Distilled water, hot	4	fl. ounces.
Simple elixir, enough to make	16	fl. ounces.

Mix the fluid extract, elixir of phosphorus, alcohol, and 8 fluid ounces of simple elixir, dissolve the iron pyrophosphate in the water, mix the two liquids, add the remainder of the elixir, and filter, if necessary, in a well-covered funnel.

Each fluid dram contains 1-200 grain of phosphorus and 1 grain of iron pyrophosphate and represents 7½ grains of damiana.

Elixir of Damiana, Nux Vomica and Phosphorus.

Fluid extract of damiana	2	fl. ounces.
Tincture of nux vomica	10½	fl. drams.
Elixir of phosphorus	2	fl. ounces.
Alcohol	2	fl. ounces.
Simple Elixir, enough to make	16	fl. ounces.

Mix the above ingredients in the order given and filter, if necessary, in a well-covered funnel.

Each fluid dram represents 1-200 grain of phosphorus, about 1 grain of nux vomica, and 7½ grains of damiana.

Elixir of Damiana and Phosphorus.

Elixir of phosphorus	8	fl. ounces.
Fluid extract of damiana	2	fl. ounces.
Alcohol	2	fl. ounces.
Simple elixir	4	fl. ounces.

Mix the elixir of phosphorus, alcohol, and fluid extract and add the simple elixir.

Elixir of Damiana, Phosphorus and Strychnine.

Elixir of phosphorus	8	fl. ounces.
Fluid extract of damiana	2	fl. ounces.
Alcohol	2	fl. ounces.
Strychnine sulphate	1¼	grains.
Simple elixir	4	fl. ounces.

Mix the elixir of phosphorus, alcohol, and fluid extract and add the simple elixir, having first dissolved the alkaloidal salt in the latter.

Each fluid dram represents 7½ grains of damiana and contains 1-100 grain each of phosphorus and strychnine sulphate.

Elixir of Dewberry Root, Compound.

Dewberry root, in coarse powder	2¼	av. ounces.
Galls, powdered.....	120	grains.
Kino, powdered.....	120	grains.
Cinnamon, powdered.	60	grains.
Cloves, powdered....	30	grains.
Capsicum, powdered.	5	grains.
Tincture of opium...	4	fl. drams.
Spirits of peppermint	45	minims.
Brandy	16	fl. ounces.
Sugar	7½	av. ounces.

Macerate all of the above, sugar excepted, for 14 days, shaking occasionally; express, filter, and in the filtrate dissolve the sugar.

Elixir of Dandelion.

Fluid extract of dandelion	6	fl. ounces.
Simple elixir, enough to make	16	fl. ounces.

Each fluid dram represents 22½ grains of dandelion.

Elixir of Dandelion, Compound. A

(Compound Elixir of Taraxacum.)

Fluid extract of dandelion	4	fl. drams.
Fluid extract of sweet orange peel	2½	fl. drams.
Fluid extract of wild cherry	2½	fl. drams.
Fluid extract of licorice root	1	fl. ounce.
Tincture of cinnamon..	4	fl. drams.
Compound tincture of cardamom	4	fl. drams.
Aromatic elixir, enough to make	16	fl. ounces.

Mix, let stand a few days, and filter. —N. F.

Elixir of Dandelion, Compound. B

Dandelion	320	grains.
Wild cherry	320	grains.
Sweet orange peel, recently dried	320	grains.
Licorice, Russian, peeled	2¼	av. ounces.
Cinnamon, Saigon ..	80	grains.
Cardamom	80	grains.
Canada snake root..	80	grains.
Caraway	80	grains.
Cloves	27	grains.
Simple syrup	21	fl. ounces.
Alcohol		of each
Water .....—		sufficient.

Elixir of Dandelion, Compound. C

A formula for a preparation of the same name, which is also much in use and which is much different in some respects from either of the preceding is the following:

Fluid extract of dandelion.	5	fl. drams.
Fluid extract of wild cherry	3	fl. drams.
Fluid extract of gentian..	1	fl. dram.
Fluid extract of licorice root	1	fl. dram.
Simple elixir, enough to make	16	fl. ounces.

Mix and filter.

Elixir, Emmenagogue.

Rue	96 grains.
Spanish saffron	96 grains.
Savin	96 grains.
Socotrine aloes.....	192 grains.
Adjuvant elixir, enough to make	16 fl. ounces.

Reduce the drugs to moderately fine powder, mix with 12 fluid ounces of adjuvant elixir, macerate for 7 days, agitating occasionally, filter, and

through the filter add the remainder of the elixir.

Each fluid dram represents ¾ grain each of rue, saffron and savin, and 1½ grains of aloes.

Elixir, Flavoring.

Oil of orange sweet	1½	drams.
Oil of lemon	½	dram.
Oil of cardamom	10	minims.
Oil of coriander	5	minims.
Tincture of vanillin	2	ounces.

Elixir, Simple.

Oil of orange sweet	1½	drams.
Oil of lemon	½	dram.
Oil of cardamon	10	minims.
Oil of coriander	5	minims.
Tincture of vanillin	2	ounces.
Cologne spirits, 188 per ct.	2	pints.
Simple syrup	3	pints.
Rose water	1	pint.
Water	2	pints.
Magnesia carbonate	1	ounce.

Dissolve the oils in 4 ounces of the cologne spirits, place the magnesia in a large mortar, pour on the solution of oils and triturate well. Take 12 ounces of the spirits, mix with the 32 ounces of water and slowly add to the contents of the mortar, stirring constantly and uniformly for 10 minutes to insure its solubility; filter and set aside. Mix the syrup and rosewater, and to this mixture add the remaining pint of spirits, then add the 2 ounces of vanillin extract and shake well. To this add the soluble flavoring and mix thoroughly. If the syrup is clear no filtering is required. If red elixir is desired, color with carmine and caramel. q. s. This elixir has a fine flavor and may be used with iron salts.

Elixir of Galls, Aromatic.

Galls	1	av. ounce.
Nutmegs	½	av. ounce.
Cinnamon	½	av. ounce.
Brandy	sufficient.	
Elixir of orange	10	fl. ounces.

Reduce the drugs to moderately coarse powder, moisten with brandy, pack in a percolator and percolate until 6 fluid ounces of liquid are obtained, to which add the elixir.

Elixir de Garus. A

Oil of cassia	8	drops.
Oil of cloves	8	drops.
Oil of mace	8	drops.
Saffron	20	grains.
Tincture of vanilla	½	fl. dram.
Alcohol	5	fl. ounces.
Orange flower water	6½	fl. ounces.
Sugar	7	av. ounces.

Mix the oil, saffron, tincture and alcohol, macerate for 2 days, agitating occasionally; strain to remove the saffron, add the orange flower water and sugar, agitate until the latter is dissolved, and filter.—H. modified.

Elixir de Garus. B

(Elixir Gari.)

Cinnamon	30	grains.
Canella	30	grains.
Cloves	30	grains.
Nutmeg	30	grains.
Myrrh	110	grains.
Aloes	220	grains.
Spanish saffron	8	grains.
Orange flower water	1	fl. ounce.
Water	8	fl. ounces.
Simple syrup	16	fl. ounces.
Alcohol	16	fl. ounces.

Reduce the drugs, except the saffron, to a moderately coarse powder, macer-

ate for 24 hours in a small still with 8 fluid ounces of alcohol and the water, then distil off 8 fluid ounces; to this distillate add the saffron, the remainder of the alcohol and the orange flower water; macerate for 2 days, agitating occasionally; add the syrup and filter.

Elixir of Gentian.

Fluid extract of gentian..5½ fl. drams.
Compound spirit of cardamom .....4 fl. drams.
Solution of tersulphate of iron .....4 fl. drams.
Water of ammonia .....4½ fl. drams.
Alcohol .....— of each
Distilled water .....— sufficient.
Aromatic elixir.....

Dilute the solution of tersulphate of iron with 4 fluid ounces of cold water, and add it, constantly stirring, to the water of ammonia, previously diluted with an equal volume of cold water. Collect the precipitate on a well-wetted muslin strainer, allow it to drain completely, return it to the vessel, mix it intimately with 4 fluid ounces of water, and again drain. Repeat this operation once more with the same quantity of water. When the precipitate has been completely drained for the third time, fold the strainer, and press it gently so as to remove the water as completely as possible without loss of magma; then remove the magma into a tared bottle, and ascertain its weight. Now add to the magma one-fifth of its weight of alcohol, the fluid extract, compound tincture and 12 fluid ounces of aromatic elixir, and shake the mixture occasionally during 24 hours. Filter through paper, and pass enough aromatic elixir through the filter to make the product measure 16 fluid ounces. Each fluid dram about 2 grains of gentian.

Elixir of Gentian, Compound. A

Stronger compound infusion of gentian, N. F 4½ fl. ounces.
Aromatic elixir .....11¾ fl. ounces.

Elixir of Gentian, Compound. B

Gentian .....256 grains.
Coriander ..... 64 grains.
Bitter orange peel..... 64 grains.
Alcohol ..... of each
Water ..... sufficient.
Sugar ..... 5 av. ounces.
Aromatic spirit ..... 1 fl. ounce.
Egg albumen .....120 grains.
Citric acid ..... 5 grains.

Mix alcohol and water in the proportion of 1 of the former to 2 of the latter by measure, and with this mixture percolate the drugs, previously ground to moderately fine powder, until 12 fluid ounces of percolate are obtained. To this percolate add the albumen and citric acid, agitate until the latter is dissolved, add the aromatic spirit and filter. In the absence of dried egg albumen, the white of 1 egg may be employed.

Elixir of Gentian, Compound. C

Compound tincture of gentian ..... 5½ fl. ounces.
Simple elixir.....10¾ fl. ounces.

Each fluid dram represents 2 grains of gentian.

Elixir of Gentian and Iron Pyrophosphate.

Iron pyrophosphate, soluble .....128 grains.
Distilled water, hot..... 4 fl. drams.
Elixir of gentian, enough to make..... 16 fl. ounces.

Dissolve the iron salt in the water, add the elixir, and filter, if necessary.

Each fluid dram contains 1 grain of iron salt and represents nearly 2 grains of gentian.

Elixir of Gentian, Iron Phosphate, Nux Vomica and Quassia.

Tincture of nux vomica..256 minims.
Iron phosphate .....128 grains.
Distilled water, hot..... 4 fl. drams.
Fluid extract of quassia. 4 fl. drams.
Compound fluid extract of gentian..... 4 fl. drams.
Simple elixir, enough to make ..... 16 fl. ounces.

Dissolve the iron phosphate in the water, add the other ingredients and filter.

Each fluid dram contains 1 grain of iron phosphate, and represents 2-5 grains of nux vomica, nearly 2 grains of quassia, and 1¼ grains of gentian.

Elixir of Gentian and Phosphorous.

Fluid extract of gentian..10 fl. drams.
Elixir of phosphorus..... 8 fl. ounces.
Compound elixir of taraxacum ..... 5 fl. ounces.
Aromatic elixir, enough to make .....16 fl. ounces.

Each fluid dram represents 1-100 grains of phosphorus and 5 grains of gentian.

Elixir of Guaiac.

Tincture of guaiac..... 4 fl. ounces.
Potassium carbonate.....20 grains.
Water ..... 2 fl. drams.
Glycerin ..... 4 fl. ounces.
Compound elixir of taraxacum ..... 4 fl. ounces.
Simple syrup..... 4 fl. ounces.

Dissolve the potassium carbonate in the water, add to the tincture of guaiac and to this mixture add the remaining ingredients in the order given above.

Elixir of Golden Seal.

(Elixir of Hydrastis.)

Glycerite of hydrastis..10½ fl. drams.
Simple elixir, enough to make .....16 fl. ounces.

Each fluid dram represents 5 grains of golden seal.

Elixir of Guarana.

Guarana, powdered... 3¼ av. ounces.
Light magnesia.....175 grains.
Oil of cinnamon..... 5 drops.
Simple syrup..... 13 fl. drams.
Diluted alcohol.....sufficient.
Sand, clean and coarse. 6½ av. ounces.

Mix the guarana and magnesia, moisten with 2½ fluid ounces of diluted alcohol, set aside for 24 hours, then mix with the sand, pack in a percolator, percolate until 13 fluid ounces of liquid are obtained, then remove the mass from the percolator, inclose it in a cloth and express in a tincture press; to the percolate add the oil and syrup, and make up to 16 fluid ounces by addition of the expressed liquid, previously concentrating the latter, if necessary, by evaporation.

Each fluid dram represents about 11 grains of guarana.

Elixir of Helonias.

Fluid extract of helonias.. 4 fl. ounces.
Simple elixir.....12 fl. ounces.

Mix, allow to stand for 24 hours and filter.

Each fluid dram represents 15 grains of helonias.

Elixir of Helonias, Compound.

(Compound Elixir of Squaw-vine.—Compound Elixir of Mitchella.)

Fluid extract of false unicorn (helonias dioica)	2	fl. ounces.
Fluid extract of mitchella	4	fl. ounces.
Fluid extract of blue cohosh	2	fl. ounces.
Fluid extract of crampbark	2	fl. ounces.
Purified talcum	½	av. ounce.
Aromatic elixir, enough to make	16	fl. ounces.

Mix and filter.

Each fluid dram represents nearly 14 grains of mitchella, and 7 grains each of helonias, blue cohosh and crampbark.

Each fluid dram represents nearly 14 grains of mitchella, and 7 grains each of helonias, blue cohosh and crampbark.

Elixir of Hypophosphites of Iron and Quinine. A

Iron hypophosphite	128	grains.
Potassium citrate	128	grains.
Quinine sulphate	128	grains.
Calcium hypophosphite	30	grains.
Spirit of orange	2	fl. drams.
Orange flower water	1	fl. ounce.
Sugar	5	av. ounces
Alcohol	—	of each
Distilled water	—	sufficient.

Dissolve the iron hypophosphite with the aid of the potassium citrate in the orange flower water, and enough water to make the solution measure 6½ fluid ounces, and in this dissolve the sugar. Triturate the quinine sulphate with 5 fluid ounces of alcohol, add a solution of the calcium-hypophosphite in 4 fluid drams of water, and shake the mixture occasionally during 1 hour; filter, and wash the filter with enough alcohol to make 6½ fluid ounces. Add this solution to the spirit of orange, mix this with the iron solution and sugar solution previously prepared, and filter the whole.

Each fluid dram contains 1 grain each of the hypophosphites of iron and quinine.

Elixir of Six Iodides.

Arsenic iodide	1	grain.
Mercuric iodide	1	grain.
Manganese iodide	13	grains.
Sodium idodide	128	grains.
Potassium idodide	128	grains.
Solution of iron iodide, N. F.	15	minims.
Sodium hypophosphite	sufficient.	
Simple elixir enough to make	16	fl. ounces.

Add the six iodides to the elixir, dissolve by agitation, add a few grains of sodium hyphophosphite, or sufficient to decolorize the liquid, and filter.

Each fluid dram contains 1-128 grains each of arsenic and mercury iodides, 1-12 grains each of ferrous iodide, 1-10 grain of manganese iodide, and 1 grain each of sodium and potassium iodides.

Elixir of Iodide of Potassium, Compound.

(Alterative Elixir.)

Potassium iodide	640	grains.
Tincture of citrochloride of iron	10½	fl. drams.
Spirit of orange	4	fl. drams.
Fluid extract of saxifrage	12	fl. drams.

Fluid extract of stillingia ..... 12 fl. drams.
Fluid extract of menispermum ..... 12 fl. drams.
Fluid extract of helonias ..... 12 fl. drams.
Sugar ..... 4½ av.ounces
Water, enough to make 16 fl. ounces.

Dissolve the potassium iodide in the water, add the tincture of iron, and in this mixture dissolve the sugar by agitation. Mix the fluid extracts, add the spirit, then the syrup, allow the whole to stand for two days, and filter.

Each fluid dram contains 5 grains of potassium iodide, and represents about ½ grain of ferric chloride and about 5½ grains each of saxifraga, stillingia, menispermum and helonias.

Elixir of Iodide of Potassium.

Potassium iodide.....640 grains.
Aromatic elixir of licorice, enough to make... 16 fl. ounces.

Dissolve by agitation.

Each fluid dram contains 5 grains of potassium iodide.

Elixir of Iron, Pepsin and Quinine.

Iron pyrophosphate, soluble ..... 256 grains.
Quinine hydrochlorate.... 32 grains.
Distilled water, hot..... 1 fl. ounce.
Elixir of pepsin, N. F., enough to make..... 16 fl. ounces.

Dissolve the iron salt in the water, add the elixir and the quinine salt, agitate occasionally until dissolved, and filter. Each fluid dram contains 2 grains of iron pyrophosphate, ¼ grain of quinine hydrochlorate, and nearly 1 grain of pepsin.

Elixir of Iron, Quinine and Arsenic.

Iron pyrophosphate.....128 grains.
Quinine hydrochlorate... 64 grains.
Solution of arsenious acid .....400 minims.
Distilled water, hot..... 4 fl. drams.
Simple elixir, enough to make ..... 16 fl. ounces.

Dissolve the iron pyrophosphate in the water, dissolve the quinine in about 12 fluid ounces of elixir by agitation, mix the solutions, add the acid solution and the remainder of the elixir, then neutralize exactly with ammonia water, carefully added, and filter.

Each fluid dram contains 1 grain of iron pyrophosphate, ⅛ grain of quinine hydrochlorate, and 1-32 grain of arsenious acid.

Elixir of Iron and Wild Cherry.

Iron pyrophosphate.....128 grains.
Distilled water, hot..... 4 fl. drams.
Fluid extract of wild cherry ..... 2 fl. ounces.
Alcohol ..... 2 fl. ounces.
Simple elixir, enough to make ..... 16 fl. ounces.

Mix the alcohol and fluid, extract add the elixir, and then the iron salt previously dissolved in the water, and filter through purified talcum.

Each fluid dram contains 1 grain of iron pyrophosphate, and represents 7½ grains of wild cherry.

Elixir of Iron and Quinine Citrate.

(Elixir of Iron and Quinine.)

Citrate of iron and quinine .....256 grains.
Water ..... 1 fl. ounce.
Aromatic elixir, enough to make..... 16 fl. ounces.

Dissolve the citrate in the water, add the elixir, and filter. Each fluid dram contains 2 grains of iron and quinine citrate.

Elixir of Iron Peptonate. A

Dried egg albumen..... 75 grains.
(or fresh egg albumen...560 grains.)
Distilled water..... sufficient.
Hydrochloric acid..... 2 fl. drams.
Pepsin, pure..... 4 grains.
Solution of iron oxychloride ..... 15 fl. drams.
Solution of soda..... sufficient.
Brandy .... 14 fl. drams.

Dissolve the albumen in 16 fluid ounces of distilled water, add the hydrochloric acid and pepsin, digest the mixture at a temperature of 40 degrees C., until it produces only a faint turbidity with nitric acid; allow to cool, neutralize with solution of soda, strain, mix the colature with the solution of iron oxychloride, to which has been added 16 fluid ounces of distilled water. The mixture is again neutralized with solution of soda, the precipitate is washed by decantation with distilled water, until the washings are no longer affected by silver nitrate. The precipitate is now drained on a well-wetted muslin strainer, transferred to a porcelain capsule, 10 minims of hydrochloric acid are added, and the mixture heated on a water bath and stirred until solution occurs. To this solution is now added distilled water to make 14¼ fluid ounces, and lastly, the brandy is added.—D.

Iron peptonate may be obtained by spreading the solution in the porcelain capsule upon glass plates and allowing to dry.

Elixir of Iron Phosphate, Quinine and Strychnine. A

Strychnine (alkaloid).. 1¼ grains.
Quinine sulphate..... 64 grains.
Citric acid..... 5 grains.
Iron phosphate, soluble.256 grains.
Alcohol ..... 3 fl. ounces.
Simple syrup..... 6 fl. ounces.
Distilled water, hot... 4 fl. ounces.
Orange flower water.. 3 fl. ounces.
Sodium bicarbonate..... sufficient.

Triturate the strychnine and quinine sulphate with the acid until well mixed, and rub this mixture with the alcohol gradually added. Heat the syrup to about 65 degrees C., add to it the alcoholic liquid, and stir until clear. Dissolve the iron salt in the water, add the orange flower water, mix this with the preceding liquid, and allow to cool. Then add sodium bicarbonate in very small amounts, stirring thoroughly after each addition, until the elixir remains but slightly acid. Allow to stand for a few hours, then filter through white filter paper. Any excess of soda must be avoided.

Elixir of Iron Phosphate, Quinine and Strychnine. B

Strychnine sulphate... 1¼ grains.
Quinine hydrochlorate.128 grains.
Iron phosphate, soluble.256 grains.
Potassium citrate..... 32 grains.
Alcohol ..... 1½ fl. ounces.
Distilled water, hot.... 1 fl. ounce.
Glycerin ..... 18 fl. drams.
Aromatic elixir, enough to make..... 16 fl. ounces.

Dissolve the quinine salt in 10 fluid ounces of elixir, mixed with the alcohol, by agitation, and mix this solution with the strychnine sulphate previously dissolved in 2 fluid drams of the water.

Dissolve the iron phosphate in 6 fluid drams of the water, add 2 fluid ounces of glycerin and mix this solution with the preceding liquid. Now to this mixture add the potassium citrate dissolved in 1½ fluid ounces of aromatic elixir mixed with 2 fluid drams of glycerin. Allow the whole to stand for several hours, then filter.

Elixir of Iron, Quinine and Strychnine Phosphates.

(Elixir of Three Phosphates.)

Nearly all of the preparations dispensed under this name contain the iron as phosphate or pyrophosphate, and the quinine and strychnine in some other form than as phosphate. If it be desired to dispense such a preparation as "elixir of three phosphates," then any of the preparations made according to formulas given in this formulary under elixir of iron phosphate, or pyrophosphate, quinine and strychnine may be dispensed.

The following formula does actually contain the three bases in the form of phosphates, which are maintained in solution by the excess of hydrochloric acid:

Solution of iron chloride, U. S. P.	7½	fl. drams.
Quinine (alkaloid)	110	grains.
Strychnine alkaloid	1	grain.
Phosphoric acid, U. S. P.	2½	fl. drams.
Distilled water	2	fl. drams.
Alcohol	1	fl. ounce.
Simple elixir	10	fl. ounces.
Simple syrup, enough to make	16	fl. ounces.

Mix the iron solution, phosphoric acid and water, and in this mixture dissolve the alkaloids; to this solution add the syrup, and then elixir and alcohol previously mixed.

However, any elixir containing iron in the form of phosphate or pyrophosphate will inevitably darken upon exposure to light, and therefore some manufacturers place upon the market a so-called "permanent elixir of three phosphates," which contains the iron as citrochloride. See formula for.

Elixir of Iron "Protoxide."

Solution of "protoxide" of iron	2	fl. ounces.
Simple elixir	14	fl. ounces.

Elixir of Iron Pyrophosphate, Quinine and Strychnine. A

Iron pyrophosphate, soluble	256	grains.
Quinine sulphate	64	grains.
Strychnine	1¼	grains.
Citric acid	5	grains.
Alcohol	3	fl. ounces.
Spirit of orange	1½	fl. drams.
Distilled water	7	fl. ounces.
Simple syrup	6	fl. ounces.
Ammonia water	sufficient	

Triturate the quinine sulphate, strychnine and acid together, until minutely divided, and add the alcohol and spirit of orange; warm the syrup to about 65 degrees C., and add to the alcoholic mixture, stirring until clear. To this add the iron salt previously dissolved in the water; to the mixture add ammonia water, drop by drop, until tne mixture is clear, and finally filter.

Elixir of Iron Salicylate.

Iron salicylate	640	grains.
Distilled water, hot	2¼	fl. ounces.
Glycerin	2¼	fl. ounces.
Simple elixir, enough to make	16	fl. ounces.

Dissolve the iron salt in the hot water and glycerin, add the elixir, allow to stand for a few days and filter.

Each fluid dram contains 5 grains of iron salicylate.

Elixir of Iron Salicylate, Compound.

Iron salicylate	640	grains.
Distilled water, hot	2¼	fl. ounces.
Glycerin	2¼	fl. ounces.
Fluid extract of colchicum root	9	fl. drams.
Deodorized tincture of opium	4½	fl. drams.
Simple elixir, enough to make	16	fl. ounces.

Dissolve the iron salt in the hot water and glycerin, add the other ingredients, allow to stand a few days, and filter.

Each fluid dram contains 5 grains of iron salicylate and represents about 4¼ grains of colchicum root and 2 minims of deodorized tincture of opium.

Elixir of Iron Valerianate.

Iron valerianate	128	grains.
Alcohol	1	fl. ounce.
Simple elixir	15	fl. ounces.

Dissolve the iron salt in the alcohol, add the elixir, and filter.

Each fluid dram contains 1 grain of iron valerianate.

Elixir of Kola.

Fluid extract of kola	2	fl. ounces.
Ammoniated glycyrrhizin	60	grains.
Saccharin	60	grains.
Oil of orange	5	drops.
Water	7	fl. ounces.
Alcohol	3½	fl. ounces.
Syrup	3½	fl. ounces.
Simple elixir, enough to make	16	fl. ounces.

Dissolve the ammoniated glycyrrhizin in the water and in this dissolve the saccharin; add the syrup and alcohol, followed by the fluid extract of kola, to which has been added the oil of orange; set aside for 5 or 6 hours, agitating occasionally; filter, and add the simple elixir.

Each fluid dram represents 7½ grains of kola.

Elixir of Licorice Aromatic. A

Cardamom (seed without capsule)	16	grains.
Cinnamon	16	grains.
Staranise	16	grains.
Coriander	8	grains.
Caraway	8	grains.
Canella	4	grains.
Nutmeg	4	grains.
Cloves	4	grains.
Vanilla	24	grains.
Ammoniated glycyrrhizin	110	grains.
Diluted alcohol	6½	fl. ounces.
Water, hot	1	fl. ounce.
Simple syrup, enough to make	16	fl. ounces.

Reduce the drugs to moderately coarse powder, macerate for 7 days in the diluted alcohol, and filter, adding if necessary, enough diluted alcohol to make the filtrate measure 6½ fluid ounces through the filter to dissolve the glycyrrhizin in the water, mix this solution with the filtrate, and add the syrup.

Elixir of Licorice-Aromatic. B

Select licorice root, cut and slightly bruised.	2¼	av. ounces.
Water of ammonia	4	fl. drams.
Glycerin	1	fl. ounce.
Water	16	fl. ounces.

Macerate for 24 hours, strain, boil for 10 minutes, filter, and evaporate at gentle heat until reduced to 6 fluid ounces.

Now add to this evaporated infusion:

Simple syrup	6	fl. ounces.

Alcohol ..... 4 fl. ounces.
Spirit of orange..... 2 fl. drams.
Oil of cinnamon (Ceylon). 2 drops.

This elixir is employed for disguising the taste of bitter medicines, particularly quinine. No acid should be used because it dissolves the quinine and makes its bitter taste more perceptible, and at the same time liberates the glycyrrhizin from its combination with ammonia and renders it insoluble, and therefore valueless for the purpose of disguising or modifying taste.

Elixir of Licorice Compound.

Pure extract of licorice,
(U. S. P.)..... ½ av. ounce.
Wine of antimony..... 1 fl. ounce.
Paregoric ..... 2 fl. ounces.
Spirit of nitrous ether.. 4 fl. drams.
Elixir of cherries, enough
to make.....16 fl. ounces.

Dissolve the extract in a portion of the elixir and add the remaining ingredients.

The above replaces "brown mixture" in the form of an elixir.

Elixir of Long Life.

("Elixir ad Longam Vitam."—"Elixir of Life."—Compound Tincture of Aloes.) (Germ. Pharm.) ("Swedish Bitters.")

Aloes .....200 grains.
Rhubarb ..... 35 grains.
Gentian ..... 35 grains.
Zedoary ..... 35 grains.
Spanish saffron..... 35 grains.
Water ..... 4 fl. ounces.
Alcohol ..... 12 fl. ounces.

Mix the drugs in coarse powder with the two liquids, macerate for 3 days, agitating frequently; express and filter. Sometimes 35 grains of agaric is added to the other drugs, and the menstruum generally employed is diluted alcohol.

The following is a simple formula which may be used for the preparation of this ancient and complicated remedy:

Tincture of aloes and
myrrh ..... 8 fl. ounces.
Tincture of rhubarb..... 2 fl. ounces.
Compound tincture of gentian ..... 1 fl. ounce.
Water ..... 1 fl. ounce.
Alcohol ..... 4 fl. ounces.

Elixir of Lupulin.

Fluid extract of lupulin.. 1 fl. ounce.
Magnesium carbonate..... 1 av. ounce.
Simple elixir, enough to
make .....16 fl. ounces.

Triturate the fluid extract with the talcum, add the elixir, transfer to a bottle, set aside for several hours, and filter.

The above is of the strength usually furnished by manufacturers; Diehl's formula, which is largely used, directs the use of 2 fluid ounces of the fluid extract to the pint of finished elixir.

Elixir of Lupulin and Sodium Bromide.

Sodium bromide.....640 grains.
Fluid extract of lupulin 10½ fl. drams.
Purified talcum.....120 grains.
Aromatic elixir of licorice, enough to make. 16 fl. ounces.

Triturate the fluid extract with the talcum, add some of the elixir, transfer to a bottle, add the sodium salt and the remainder of the elixir, dissolve by agitation, and filter after several hours.

Each fluid dram represents 5 grains of lupulin and contains 5 grains of sodium bromide.

Elixir of Malt.

Extract of malt..... 4 fl. ounces.
Simple elixir .....12 fl. ounces.

Elixir of Malt and Pepsin.

Elixir of malt..... 8 fl. ounces.
Elixir of pepsin..... 8 fl. ounces.
Mix and filter.
Each fluid dram represents ½ grain of pepsin and 15 minims of extract of malt.

Elixir of Manaca and Salicylates.

Fluid extract of manaca ..... 2½ fl. ounces.
Sodium salicylate.... 1¾ av. ounces.
Potassium salicylate..284 grains.
Lithium salicylate.... 96 grains.
Simple elixir, enough to make ..... 16 fl. ounces.

Dissolve the salicylates in some of the elixir, add the fluid extract and the remainder of the elixir, allow to stand for a few hours, and filter through talcum.

Each fluid dram contains 6 grains of sodium salicylate, 3 grains of potassium salicylate, and ¾ grain of lithium salicylate, and represents nearly 10 grains of manaca.

Elixir of Matico, Compound.

Fluid extract of matico. 3 fl. ounces.
Fluid extract of buchu.. 1½ fl. ounces.
Fluid extract of cubeb.. 1½ fl. ounces.
Alcohol ..... 2 fl. ounces.
Simple elixir ..... 4 fl. ounces.
Compound elixir of taraxacum ..... 4 fl. ounces.

Mix; set aside for 3 days, and filter through talcum.

Each fluid dram represents 11 grains of matico and nearly 4 grains each of buchu and cubeb.

Elixir of Morphine Valerianate.

Morphine valerianate.....16 grains.
Simple elixir.....16 fl. ounces.
Dissolve by agitation and filter.

Each fluid dram contains ⅛ grain of morphine valerianate.

Elixir of Orange.

Oil of orange..... 4½ fl. drams.
Alcohol .....14 fl. ounces.
Water .....22 fl. ounces.
Simple syrup.....28 fl. ounces.
Purified talcum..... ½ av. ounce.

Mix the oil and alcohol, add the talcum, shake well, and then add the other ingredients in small portions at a time, agitating well after each addition.—U. S. P. 1880 modified.

The oil used should be a perfectly fresh sweet oil of orange peel.

Elixir of Orange, Compound.

(Compound Wine of Orange.—Vinum Amarum, Bitter Wine.—Elixir Stomachicum, Stomachic Elixir.—Elixir Viscerale Hoffmani.)

Bitter orange peel, cut..1600 grains.
Cinnamon, bruised..... 320 grains.
Potassium carbonate.... 80 grains.
Extract of gentian..... 160 grains.
Extract of wormwood... 160 grains.
Extract of buckbean.... 160 grains.
Extract of cascarilla.... 160 grains.
Sherry wine, enough to make ..... 16 fl. ounces.

Macerate the orange peel, cinnamon and potassium carbonate with 16 fluid ounces of sherry wine for 8 days, agitating occasionally; express the liquid portion, in the latter dissolve the extracts, filter, and add enough sherry wine through the filter to make the fil-

trate measure 16 fluid ounces.—Germ. Pharm.

The National Formulary also recognizes what is identically the same preparation under the title of "compound wine of orange;" in the latter no extracts are used, but the drugs themselves are mixed with the orange peel, cinnamon, and potassium carbonate, the whole being extracted by percolation.

Elixir of Pancreas.

Take 1 pig pancreas, chop into pieces, and macerate in a cool place for 3 days in a mixture of

Water .....32 fl. ounces.
Glycerin ..... 6½ fl. ounces.
Hydrochloric acid..... 5 fl. ounces.

Strain, add ⅛ fluid dram of oil of orange and enough glycerin to make 48 fluid ounces, and filter.

Elixir of Pancreatin.

Pancreatin, pure .....128 grains.
Sodium bicarbonate..... 16 grains.
Water ..... 2 fl. ounces.
Simple elixir, enough to
make ..... 16 fl. ounces.

Macerate the pancreatin in the water for 24 hours, add the sodium bicarbonate, triturate until dissolved, gradually add the elixir and filter.

Each fluid dram represents 1 grain of pancreatin.

The elixir of pancreas may be substituted for the above, if deemed desirable.

Elixir of Pancreatin, Bismuth and Pepsin.

Citrate of bismuth and
ammonium .....128 grains.
Pancreatin, pure..... 64 grains.
Pepsin, pure..... 64 grains.
Distilled water, hot..... 1 fl. ounce.
Water of ammonia..... sufficient.
Glycerin ..... 2 fl. ounces.
Water ..... 2 fl. ounces.
Tincture of cudbear..... 2 fl. drams.
Simple elixir, enough to
make ..... 16 fl. ounces.

Triturate the bismuth salt with the water, allow the insoluble portion to subside, decant the clear portion, to the residue add ammonia water very gradually, until the solution occurs, carefully avoiding any excess, and mix this liquid with the decanted portion.

Macerate the pepsin and pancreatin with the glycerin and water for 24 hours, agitating occasionally; add the tincture, the bismuth solution, and the elixir, and filter through purified talcum.

Each fluid dram contains 1 grain each of pepsin and of citrate of bismuth and ammonium, and ½ grain of pancreatin.

Elixir of Pancreatin and Pepsin.

Pancreatin, pure ..... 64 grains.
Pepsin, pure .....128 grains.
Glycerin ..... 2 fl. ounces.
Water ..... 2 fl. ounces.
Tincture of cudbear..... 2 fl. drams.
Simple elixir, enough to
make ..... 16 fl. ounces.

Macerate the pepsin and pancreatin with the glycerin and water for 24 hours, agitating occasionally; add the tincture and elixir and filter through talcum.

Each fluid dram contains 1 grain of pepsin and ½ grain of pancreatin.

Elixir of Papain.

Papain	256	grains.
Glycerin	3¼	fl. ounces.
Saccharin	10	grains.
Sherry wine	8	fl. ounces.
Chloroform water	4¾	fl. ounces.

Mix, let stand for 7 days, agitating occasionally, and filter.

Each fluid dram contains 2 grains of papain.

Elixir of Paraldehyde.

Paraldehyde	4	fl. ounces.
Glycerin	2	fl. ounces.
Alcohol	5	fl. ounces.
Tincture of cardamom	2¼	fl. drams.
Oil of orange	15	minims.
Oil of cinnamon	15	minims.
Compound tincture of cudbear	2	fl. drams.
Aromatic elixir, enough to make	16	fl. ounces.

Mix the ingredients in the order given, and filter, if necessary.—N. F.

Each fluid dram contains 15 minims of paraldehyde.

Elixir of paraldehyde varies in strength from 10 to 25 per cent, as prescribed in different localities. The formula here given produces a 25 per cent elixir, and from this the weaker preparations may readily be made by the addition of aromatic elixir colored with compound tincture of cudbear in the proportion used in the above formula.

To make a 20 per cent elixir of paraldehyde, for instance, 4 fluid ounces of the 25 per cent elixir are mixed with 1 fluid ounce of colored aromatic elixir. To make 5 fluid ounces of 15 per cent elixir, 3 fluid ounces of the 25 per cent elixir are required, and to make the same quantity of 10 per cent elixir, 2 fluid ounces of the above elixir are required.

Elixir of Pareira Brava.

Fluid extract of pareira	2	fl. ounces.
Simple elixir	14	fl. ounces.

Mix, allow to stand for 24 hours and filter through talcum.

Each fluid dram represents 7½ grains of pareira brava.

Elixir of Pepsin.

Pepsin, pure	128	grains.
Hydrochloric acid	½	fl. dram.
Glycerin	2	fl. ounces.
Compound elixir of taraxacum	1	fl. ounce.
Alcohol	3	fl. ounces.
Purified talcum	120	grains.
Sugar	4½	av. ounces.
Water, enough to make	16	fl. ounces.

Mix the pepsin with 6 fluid ounces of water, add the glycerin and acid, and agitate until solution has been effected. Then add the compound elixir of taraxacum, alcohol and the talcum and mix thoroughly. Set the mixture aside for a few hours, occasionally agitating. Then filter it through a wetted filter, dissolve the sugar in the filtrate, and pass the remainder of the water through the filter.

Each fluid dram represents 1 grain of pepsin.—N. F.

Elixir of Pepsin, Compound. A

(Elixir of Lactated or Lactinated Pepsin.—Compound Digestive Elixir.)

Pepsin, soluble scales	75	grains.
Pancreatin, pure	8	grains.
Diastase	8	grains.
Lactic acid	20	minims.
Hydrochloric acid	40	minims.
Glycerin	4	fl. ounces.
Water	2	fl. ounces.
Tincture of cudbear, N. F.	2	fl. drams.
Talcum, purified	120	grains.

Aromatic elixir, enough
to make..... 16 fl. ounces.

Add the acid to the water and glycerin, and to this mixture add the pepsin, pancreatin, and disastase, and macerate until apparently dissolved; then add the tincture and aromatic elixir; thoroughly incorporate the purified talcum and filter.

Elixir of Pepsin, Compound. B

Pepsin, pure..... 80 grains.
Pancreatin ..... 40 grains.
Distastase of ptyalin.... 10 grains.
Cudbear, powdered.....180 grains.
Diluted hydrochloric acid 20 minims.
Lactic acid..... 3 drops.
Alcohol ..... 3 fl. ounces.
Water ..... 7 fl. ounces.
Simple syrup..... 6 fl. ounces.

Mix all the above except the syrup, macerate for 3 days, agitating frequently; filter, to the filtrate add the syrup, and then through the filter add enough of a mixture of alcohol and water in the proportion of 5 to 7 by measure to make the liquid measure 16 fluid ounces.

Elixir of Pepsin and Quinine.

Quinine sulphate.....32 grains.
Elixir of pepsin.....16 fl. ounces.

Agitate until dissolved and filter.

Each fluid dram contains 1 grain of pepsin and ¼ grain of quinine sulphate.

Elixir of Pepsin, Quinine and Strychnine.

Strychnine sulphate.... 1¼ grains.
Distilled water..... 4 fl. drams.
Elixir of pepsin and
quinine .....15½ fl. ounces.

Dissolve the alkaloidal salt in the water and add the elixir.

Each fluid dram contains 1/100 grain of strychnine sulphate, nearly ¼ grain of quinine sulphate, and nearly 1 grain of pepsin.

Elixir of Pepsin and Strychnine.

Strychnine sulphate.... 1¼ grains.
Distilled water..... 4 fl. drams.
Elixir of pepsin.....15½ fl. ounces.

Dissolve the alkaloidal salt in the water and add the elixir.

Each fluid dram contains 1/100 grain of strychnine sulphate and nearly 1 grain of pepsin.

Elixir of Pepsin and Wafer Ash.

(Elixir Pepsin and Ptelea.)

Pepsin, pure.....,128 grains.
Simple elixir..... 14 fl. ounces.
Fluid extract of wafer ash 2 fl. ounces.
Purified talcum.....120 grains.

Add the pepsin to the simple elixir, agitate until dissolved, add the remaining ingredients, set aside for 24 hours, and filter.

Each fluid dram contains 1 grain of pepsin and represents 7½ grains of wafer ash.

Elixir of Phosphorus. A

Spirit of phosphorus.... 3¾ fl. ounces.
Oil of anise.....16 minims.
Glycerin ..... 9 fl. ounces.
Aromatic elixir, enough
to make.....16 fl. ounces.

To the spirit contained in a bottle, add the oil and glycerin and mix by repeatedly inverting bottle until a clear liquid is obtained. Then add the elixir in several portions, gently agitating after each addition, until all is added.—U. S. P.

Elixir of Phosphorus. B

Phosphorus ..... 2½ grains.
Chloroform ..... 4 fl. drams.
Alcohol ..... 2¾ fl. ounces.
Glycerin, enough to make. 16 fl. ounces.

Dissolve the phosphorus in the chloroform, add the alcohol, and then the glycerin.—Brit. Form.

Each fluid dram contains 1/50 grain of phosphorus.

Elixir of Phosphorus, Compound.

Strychnine sulphate... 1¼ grains.
Quinine sulphate..... 64 grains.
Iron pyrophosphate....128 grains.
Distilled water, hot.... 1 fl. ounce.
Alcohol ..... 1 fl. ounce.
Elixir of phosphorus... 8 fl. ounces.
Simple elixir, enough
to make..... 16 fl. ounces.

Dissolve the strychnine salt in 4 fluid drams of the water, and the iron salt in the remainder of the water.

Mix the alcohol and elixir of phosphorus, add the two solutions already prepared, then the quinine salt and the simple elixir, agitate until dissolved, and filter in a well-covered funnel.

Each fluid dram contains 1/100 grain of strychnine sulphate, 1 grain of iron pyrophosphate, ½ grain of quinine sulphate and 1/100 grain of phosphorus.

Elixir of Phosphorus, Quinine and Strychnine.

Elixir of phosphorus.... 8 fl. ounces.
Quinine hydrochlorate..32 grains.
Strychnine sulphate.... 1¼ grains.
Distilled water..... 4 fl. drams.
Tincture of cudbear.... 2 fl. drams.
Simple elixir, enough to
make .....16 fl. ounces.

Dissolve the quinine salt in 7 fluid ounces of simple elixir, and the strychnine salt in the water, mix the two solutions, and then add the other ingredients.

Each fluid dram contains 1/100 grain of strychnine sulphate, ¼ grain of quinine sulphate and 1/100 grain of phosphorus.

Elixir of Phosphorus and Strychnine.

Strychnine sulphate.... 1¼ grains.
Distilled water..... 4 fl. drams.
Elixir of phosphorus... 8 fl. ounces.
Tincture of cudbear.... 2 fl. drams.
Simple elixir, enough to
make .....16 fl. ounces.

Dissolve the quinine salt in the water and add the remaining ingredients.

Each fluid dram contains 1/100 grain of phosphorus and strychnine sulphate.

Elixir Pulmonic.

(Pectoral Elixir.)

Pure extract of licorice..300 grains.
Fluid extract of squill...128 minims.
Fluid extract of senega..128 minims.
Fluid extract of henbane
leaves .....128 minims.
Fluid extract of ipecac... 64 minims.
Morphine sulphate..... 8 grains.
Distilled water..... 4 fl. drams.
Tincture of cacao..... 1 fl. ounce.
Elixir of cherries, enough
to make..... 16 fl. ounces.

Dissolve the morphine salt in the water, add the licorice extract, mix well, add the remaining ingredients, and filter.

Each fluid dram contains 1/16 grain of morphine sulphate.

Elixir of Quinine Bisulphate.

Quinine bisulphate.....128 grains.
Simple elixir..... 16 fl. ounces.

Dissolve by agitation and filter, if necessary.

Each fluid dram contains 1 grain of quinine bisulphate.

Elixir of Quinine and Strychnine.

Quinine sulphate.....64 grains.
Strychnine sulphate.... 1¼ grains.
Simple elixir.....16 fl. ounces.

Dissolve the alkaloidal salts in the elixir by agitation, and filter.

Each fluid dram contains ½ grain of quinine sulphate and 1/100 grain of strychnine sulphate.

Elixir of Quinine Valerianate.

Quinine valerianate.....128 grains.
Tincture of cudbear..... 2 fl. drams.
Simple elixir, enough to make ..... 16 fl. ounces.

Triturate the quinine valerianate with a little of the elixir to a smooth paste. Add about 8 fluid ounces more of elixir, triturate until dissolved, add the tincture and the remainder of the elixir.

Each fluid dram contains 1 grain of quinine valerianate.

Elixir of Quinine and Strychnine Valerianates.

Strychnine (alkaloid). 1¼ grains.
Valerianic acid..... sufficient.
Quinine valerianate....128 grains.
Tincture of cudbear.... 2 fl. drams.
Simple elixir, enough to make..... 16 fl. ounces.

Triturate the strychnine and quinine sulphate with a little elixir to a smooth paste, add 4 fluid ounces of elixir and just enough valerianic acid to dissolve the alkaloids; then add the tincture and the remainder of the elixir, neutralize any excess of valerianic acid as described in the formula preceding, and filter.

Each fluid dram contains 1 grain of quinine valerianate and 1/100 grain of strychnine valerianate.

Elixir of Rhubarb-Aromatic.

Aromatic fluid extract of rhubarb ..... 1 fl. ounce.
Simple elixir.....15 fl. ounces.

This is of the same strength as the aromatic syrup of rhubarb of the United States pharmacopoeia.

Elixir of Rhubarb and Potassium with Pancreatin.

Rhubarb .....320 grains.
Golden seal.....160 grains.
Cinnamon .....160 grains.
Potassium bicarbonate...320 grains.
Pancreatin .....320 grains.
Spirit of peppermint..... 1 fl. dram.
Simple syrup..... 2 fl. ounces.
Diluted alcohol..... } of each
Simple elixir..... } sufficient.

Moisten the rhubarb, golden seal and cinnamon (first reduced to a suitable powder) with diluted alcohol, and pack moderately in a percolator; allow to macerate 48 hours and then percolate with diluted alcohol until 6 ounces have been obtained; in the percolate dissolve the potassium bicarbonate and add the pancreatin previously dissolved in the syrup, and about 4 fluid ounces of elixir; mix thoroughly, add the spirit and enough elixir to make the whole measure 16 fluid ounces, and filter.

Elixir of Rhubarb and Potassium.

(Neutralizing Elixir.)

Rhubarb .....320 grains.
Golden seal.....160 grains.
Cinnamon .....160 grains.
Potassium bicarbonate...320 grains.
Spirit of peppermint.... 1 fl. dram.
Simple syrup..... 2 fl. ounces.
Diluted alcohol..... } of each
Simple elixir..... } sufficient.

Reduce the three drugs to moderately coarse powder, extract them in the usual way by percolation with diluted alcohol until 6 fluid ounces of percolate are obtained. In this percolate dissolve the potassium bicarbonate, add the spirit of peppermint, syrup, and enough elixir to make 16 fluid ounces of product, and filter.

This preparation represents the well-known syrup of rhubarb and potassium in the elixir form.

Elixir of Rhubarb, Magnesia and Senna.

Magnesia, calcined.....144 grains.
Acetic acid..... sufficient.
Fluid extract of rhubarb 8½ fl. drams.
Fluid extract of senna. 8½ fl. drams.
Simple elixir, enough to make..... 16 fl. ounces.

Dissolve the magnesia in 2½ fluid ounces of acetic acid with the aid of a gentle heat, adding, if necessary, a little more acetic acid, drop by drop, until the solution is neutral to test paper; then add the fluid extracts and elixir, and filter.

Each fluid dram contains 4 grains of magnesium acetate and represents 4 grains each of rhubarb and senna.

Elixir of Rhubarb and Senna.

Fluid extract of rhubarb.. 2 fl. ounces.
Fluid extract of senna.... 2 fl. ounces.
Tincture of cacao..... 2 fl. ounces.
Simple elixir.....10 fl. ounces.

Mix, and filter if necessary.

Each fluid dram represents 7½ grains each of senna and rhubarb.

Elixir of Salicylic Acid-Compound.

Salicylic acid.....640 grains.
Sodium bicarbonate.....480 grains.
Potassium iodide.....192 grains.
Fluid extract of black cohosh ..... 4 fl. drams.
Fluid extract of gelsemium ..... 2 fl. drams.
Compound spirit of orange 1 fl. dram.
Glycerin ..... 4 fl. ounces.
Water ..... 4 fl. ounces.
Alcohol ..... 4 fl. ounces.
Simple syrup, enough to make ..... 16 fl. ounces.

Mix the acid, sodium bicarbonate and water in a capacious mortar, stir occasionally until reaction is completed, add the potassium iodide, stir until dissolved, then add the alcohol, glycerin, fluid extracts, spirit and syrup, and filter.

Elixir of Senna. A

Deodorized fluid extract of senna.....8 fl. ounces.
Compound tincture of cardamom ..... ½ fl. ounce.
Simple elixir.....7½ fl. ounces.

Elixir of Senna. B

Alexandria senna.....11 av. ounces.
Sugar ..... 8 av. ounces.
Water ..... } of each
Diluted alcohol..... } sufficent.
Alcohol ..... }
Chloroform .....16 minims.
Oil of coriander..... 2 drops.
Tincture of capsicum....20 minims.

Mix 2¾ fluid ounces of alcohol with 8¼ fluid ounces of water, and with it evenly moisten the senna; pack tightly in a closed vessel, macerate for 3 days, express forcibly, break up the marc, macerate it with enough more of the same kind of menstruum to furnish, in all, 11 fluid ounces of liquid, express in 24 hours, mix the two liquids, add the sugar, heat in a closed vessel by means of a waterbath to 94 degrees C., maintain at this temperature 10 minutes, allow to cool, strain, add the chloroform, tincture of capsicum, and oil of coriander, first mixed with 2 fluid drams of alcohol, and finally add, if necessary, enough diluted alcohol to make 16 fluid ounces.—Brit. Form.

Elixir of Senna-Compound.

Fluid extract of senna... 2 fl. ounces.
Purified tamarind pulp... 4 av. ounces.
Oil of coriander.....12 drops.
Alcohol ..... 2 fl. drams.
Simple elixir, enough to
make .....16 fl. ounces.

Dissolve the oil in the alcohol, add to the fluid extract and pulp, then add the elixir.

Elixir of Saw Palmetto and Pichi.

Fluid extract of saw palmetto ..... 2 ounces.
Fluid extract pichi..... 1 ounce.
Oil of sandalwood..... ¼ ounce.
Potassium iodide..... 64 grains.
Ammonium chloride...128 grains.
Simple elixir enough to make ..... 16 fl. ounces.

Elixir of Saw Palmetto and Sandalwood Compound.

Fluid extract of saw palmetto ..... 2 ounces.
Fluid extract corn silk.. 1 ounce.
Oil of sandalwood..... ¼ ounce.
Alcohol ..... 1¾ fl. ounces.
Simple elixir, enough to make .....16 fl. ounces.

Elixir of Sumbul.

(Elixir of Musk Root.)

Fluid extract of sumbul. 2½ fl. ounces.
Alcohol ..... 1 fl. ounce.
Elixir simple.....12½ fl. ounces.
Purified talcum..... ½ av. ounce.

Triturate the fluid extract with the talcum, and the alcohol and elixir, and filter.

Each fluid dram represents about 10 grains of sumbul.

Elixir of Sumbul, Compound.

Fluid extract of sumbul. 2 fl. ounces.
Fluid extract of skullcap 4 fl. drams.
Fluid extract of valerian 1 fl. dram.
Alcohol ..... 1 fl. ounce.
Adjuvant elixir, enough to make.....16 fl. ounces.
Purified talcum..... ½ av. ounce.

Mix the fluid extracts and alcohol, add the talcum, shake well, then add the elixir, shake again, and filter.

Each fluid dram represents 7½ grains of sumbul, about 2 grains of skullcap, and about ½ grain of valerian.

Elixir of Terpin Hydrate.

Terpin hydrate.....128 grains.
Glycerin ..... 1 fl. ounce.
Alcohol ..... 2 fl. ounces.
Simple elixir, enough to
make ..... 16 fl. ounces.

Each fluid dram contains 1 grain of terpin hydrate.

Elixir of Triple Valerianates.

Iron valerianate.....64 grains.
Quinine valerianate.....64 grains.
Zinc valerianate.....64 grains.
Tincture of cudbear..... 2 fl. drams.
Valerianic acid..... sufficient.
Simple elixir, enough to
make .....16 fl. ounces.

Triturate the 3 valerianates with 8 fluid ounces of elixir to a smooth paste, add, if necessary, a very small amount of the acid, just enough to dissolve the salts, then add the tincture and the remainder of the elixir, and filter.

If too much valerianic acid has been added so that it is betrayed by its odor, it should be exactly neutralized by stirring with a glass rod repeatedly dipped in dilute ammonia water.

Each fluid dram contains ½ grain each of the valerianates of iron, quinine and zinc.

Elixir of Wafer Ash.

(Elixir of Ptelea.)

Fluid extract of wafer
ash ..... 2¾ fl. ounces.
Simple elixir, enough to
make .....16 fl. ounces.

Mix, and allow to stand for about 24 hours, then filter through purified talcum.

Each fluid dram represents 10 grains of wafer ash.

Elixir of Wahoo.

N. F.
(Elixir of Euonymus.)

Fluid extract of wahoo..2½ fl. ounces.
Water .....2 fl. ounces.
Syrup of coffee.....2 fl. ounces.
Compound elixir of tarax-
acum .....9½ fl. ounces.

Mix them, let the mixture stand 48 hours, and filter.

Each fluid dram represents about 9½ grains of wahoo.

Elixir of White Pine, Compound.

Fluid extract of white pine
bark ..... 1 fl. ounce.
Fluid extract of balsam
Gilead buds.....64 minims.
Fluid extract of spikenard.64 minims.
Fluid extract of wild cher-
ry bark..... 1 fl. ounce.
Sanguinarine nitrate..... 2 grains.
Morphine acetate..... 2 grains.
Chloroform .....64 minims.
Alcohol ..... 4 fl. ounces.
Water ..... 7 fl. ounces.
Simple syrup..... 3 fl. ounces.

Mix the fluid extracts with the alcohol, water and syrup previously mixed, and filter through purified talcum until clear; add the chloroform and dissolve the sanguinarine and morphine salts in the mixture.

The above represents the now well-known "white pine cough syrup" in the elixir form.

Elixir of Wild Cherry.

Fluid extract of wild cher-
ry ..... 4 fl. ounces.
Alcohol ..... 2 fl. ounces.
Simple elixir.....11 fl. ounces.

Mix, allow to stand for 24 hours, and filter through purified talcum.

Each fluid dram represents 15 grains of wild cherry.

Elixir of Yerba, Aromatic.

Yerba santa, coarse powder	360 grains.
Sweet orange peel, recently dried and in coarse powder	120 grains.
Liquor potassa	1 fl. dram.
Oil of cloves	4 drops.
Oil of cinnamon	4 drops.
Oil of caraway	2 drops.
Oil of coriander	1 drop.
Comp. tinct. of cardamom	1 fl. dram.
Sugar	7 av. ounces.
Glycerin, Water, Alcohol	of each sufficient.

Mix the oils and tincture with the drugs and extract by percolation in the usual way, employing as a menstruum a mixture of 1 part of alcohol, 1 of glycerin, and 3 of water, all by measure, with 1 per cent of liquor potassa; 10 fluid ounces of percolate are to be obtained, which is to be returned to the percolator, if not clear; to this add the remainder of the liquor potassa and 2 fluid ounces of alcohol, and in the whole dissolve the sugar by agitation.

Elixir of Yerba Santa, Aromatic.

Yerba santa	1 av. ounce.
Sweet orange peel	144 grains.
Cardamom (without capsule)	28 grains.
Cloves	28 grains.
Cinnamon	28 grains.
Anise	20 grains.
Coriander	20 grains.
Caraway	20 grains.
Red saunders	10 grains.
Sugar	7 av. ounces.
Alcohol, Glycerin, Distilled water	of each sufficient.

Mix the drugs, reduce to moderately coarse powder, extract by percolation with a menstruum composed of 1 part of alcohol, 1 of glycerin, and 3 of water, all by measure, until 12 fluid ounces of percolate are obtained; in the latter dissolve the sugar by agitation, and filter.

Elixir of Yerba Santa, Compound.

Fluid extract of yerba santa	1 fl. ounce.
Fluid extract of grindelia	1 fl. ounce.
Alcohol	1 fl. ounce.
Pumice stone, powdered	1 av. ounce.
Simple elixir, enough to make	16 fl. ounces.

Mix the fluid extracts, triturate with pumice stone, add 13 fluid ounces of simple elixir, mix again, allow the whole to stand for several hours, stirring occasionally, and filter.

Each fluid dram represents nearly 4 grains each of yerba santa and grindelia.

Glycerite of Alum.
(Brit. Pharm.)

Alum, powder	3 av. ounces.
Glycerin	14½ fl. ounces.

Stir together in a porcelain dish, apply a gentle heat until solution is effected, set aside and decant the clear fluid from any deposited matter.

Glycerite of Borax.

Borax, powdered	4 av. ounces.
Glycerin	14½ fl. ounces.

Triturate together until dissolved, or else warm gently, stirring constantly until dissolved.

Glycerite of Boric and Tannic Acids.

Boric acid	1 av. ounce.
Tannic acid	1¾ av. ounces.
Glycerin	13 fl. ounces.

Mix the acids with the glycerin, heat on a water bath until dissolved, and strain.

Glycerite of Creasote.

Creasote .....1¾ fl. ounces.
Alcohol .....2 fl. ounces.
Glycerin .....5½ fl. ounces.
Water .....6¾ fl. ounces.
Magnesium carbonate...1 av. ounce.

Triturate the magnesium carbonate, alcohol and creasote together in a mortar, add the water and the glycerin, put the whole in a bottle, let stand for several days and filter. The product represents about 10 per cent by weight of creasote, and may be used for making other preparations of this agent.

Glycerite of Chloroform.

Chloroform ..... 1¼ fl. ounces.
Alcohol ..... 4½ fl. ounces.
Glycerin .....10¼ fl. ounces.

Dissolve the chloroform in the alcohol, add the glycerin, and shake well.

The product represents 10 per cent by weight of chloroform.—D.

Glycerite of Gallic Acid.

(Br.)

Gallic acid..... 3½ av. ounces.
Glycerin .....12¾ fl. ounces.

Mix well, heat on a water bath until the acid is dissolved, and strain.

Glycerite of Lead Subacetate.

(Br.)

Lead acetate..... 3½ av. ounces.
Lead oxide, powdered,
2 av. ov.....20 grains.
Glycerin .....15 fl. ounces.
Distilled water..... 9 fl. ounces.

Mix all, boil together for 15 minutes, then filter, and heat again until all the water has evaporated.

This is of the same strength as the solution of lead subacetate U. S. P., and may be employed in making the diluted solution of lead subacetate.

Glycerite of Starch.

Starch .....1 av. ounce.
Water .....1 fl. ounce.
Glycerin, 6½ fl. oz. or....8 av. ounces.

To the starch, contained in a porcelain capsule, add the water and glycerin, and stir until a homogenous mixture results. Then apply heat, gradually raising the temperature to a point between 140 and 144 degrees C., stirring constantly until a transparent jelly is formed.

Honey of Borax.

(Br.)

Borax ..... 2 av. ounces.
Glycerin ..... 1 fl. ounce.
Honey .....14½ av. ounces.

Honey of Rose with Borax.

Honey of rose, U. S. P...10 av. ounces.
Borax .....10 av. ounces.

Mix and dissolve borax by aid of a gentle heat.

Honey of Rose.

Red rose leaves in No. 40
powder ..... 2 av. ounces.
Honey clarified.....23 av. ounces.
Alcohol diluted q. s. to
make the product measure .....22 fl. ounces.

Moisten the powder, with half a fluid ounce of diluted alcohol, pack it firmly

in a conical glass percolator and gradually pour diluted alcohol upon it until eight fluid ounces of percolate are obtained. Reserve six fluid drams of the percolate, evaporate the remainder by means of a water bath to ten fluid drams, add the reserved portion, and mix the whole with the clarified honey.

Honey of Rose with Salicylic Acid.

Honey of rose..... 16 av. ounces.
Salicylic acid.....140 grains.

Triturate the acid intimately with a small portion of the honey of rose, then add the remainder of the honey.

Honey of Rose with Tannic Acid.

Honey of rose..... 16 av. ounces.
Tannic acid.....370 grains.

Triturate the acid intimately with a small portion of the honey of rose, then add the remainder of the rose honey.

Hydromel.

Honey .....1 fl. ounce.
Water .....9 fl. ounces.

VETERINARY REMEDIES:

Condition Powders for Horses, Cattle, Etc. A

Ground linseed oil cake..500 pounds.
Powdered antimony..... 50 pounds.
Powdered fenugreek..... 50 pounds.
Granulated saltpetre..... 5 pounds.
Bicarbonate of soda..... 25 pounds.
Powdered nux vomica.... 2½ pounds.
Powdered sulphate of iron ..... 16 pounds.
Powdered salt..... 25 pounds.
Sulphur ..... 50 pounds.
Mix.

Directions.—Give mixed with wetted grain; for ordinary use one tablespoonful with each feed for horses. Horses need not stop work, but should have extra care and attention in stable. For acute diseases double the dose. Cattle require one and one-half tablespoonfuls. Sheep and hogs, one tablespoonful daily, at night.

This powder is warranted pure. As a general tonic it will be found of benefit to animals out of condition, while in fattening stock it adds to the value of the food by improving the appetite, loosening the skin and making them thrive much faster. As a remedy for epizootic in horses it is very popular. For hog cholera it is far superior to many of the so-called specifics sold. Purifies the blood and removes all humors.

Condition Powders for Horses, Cattle, Etc. B

Ground linseed oil cake....100 pounds.
Ground fenugreek..... 20 pounds.
Ground gentian..... 10 pounds.
Powdered rosin..... 10 pounds.
Powdered ginger..... 5 pounds.
Powdered sulphate of iron. 5 pounds.
Powdered salt..... 10 pounds.
Mix.

Dose: Same as Formula "A."

The ground linseed oil cake in the above formulas is used as a filler or vehicle for the administration of the drugs. Formerly ground mustard hull

(mustard bran) was used for this purpose, but of late years ground linseed oil cake has been obtainable at much lower figures than mustard hull; the average price of ground linseed oil cake during the last five years has been eighteen dollars a ton of two thousand pounds delivered F. O. B. on cars.

Condition Food for Horses, Cattle, Etc.

Sold as Stock Food.

Ground linseed oil cake....500 pounds.
Ground fenugreek..... 50 pounds.
Ground anise seed..... 10 pounds.
Ground ginger, African.... 5 pounds.
Powdered salt..... 25 pounds.
Powdered licorice root..... 10 pounds.
Mix.

This food is sold extensively in stock countries; it has an excellent aroma and will not become wormy.

Linseed meal from the seed would be preferable in condition powders and stock food if for quick sale after mixing, but where the goods remain in stock for a year or over the large quantity of oil in it is objectionable and causes a rancid odor to be emitted from the packages.

Cattle Condiment.

Stock Food.

Ground oil cake.....200 pounds.
Miller's shorts.....100 pounds.
Ground St. John's bread....100 pounds.
Ground fenugreek..... 30 pounds.
Ground anise seed..... 10 pounds.
Powdered salt..... 20 pounds.
Powdered sulphate of iron.. 5 pounds.
Powdered African ginger.. 5 pounds.

Harvey's Condition Powders.

Powdered gentian..... 10 pounds.
Powdered fenugreek..... 20 pounds.
Powdered ginger..... 10 pounds.
Powdered licorice..... 10 pounds.
Powdered nitrate of potash 5 pounds.
Powdered salt..... 10 pounds.
Ground oil cake.... .....100 pounds.
Mix.

Poultry Powder.

For Chickens, Ducks, Geese or Turkeys.

Cayenne pepper..... 5 pounds.
Assafoetida, powdered... 2½ pounds.
Fenugreek, powdered.... 12½ pounds.
Willow charcoal, powdered ..... 10 pounds.
Prepared chalk, ground...25 pounds.
Golden seal, powdered... 25 pounds.
Nux vomica, powdered.. 7½ pounds.
Sulphate of iron, powdered ..... 7½ pounds.
Mustard hull, yellow, ground .....200 pounds.

Directions.—For grown fowls, one or two teaspoonfuls of the powder mixed in meal with a little water. Promptness is essential in administering this remedy, so that the disease does not advance too far before it is used. Give twice a day for 3 or 4 days and then once a day and finally once every other day, until a perfect cure is beyond a doubt.

For all other diseases, such as swelled head, sore throat, etc., proceed as above.

Egg-Producing Food.

Air slaked lime.....100 pounds.
Oyster shells, ground.....200 pounds.
Cayenne pepper..... 10 pounds.
Venetian red..... 40 pounds.
Black pepper, ground..... 10 pounds.
Mix.
Dose: 1 tablespoonful in 12 feeds.

Worm Powder for Horses.

Pink root, powdered..... 8 ounces.
Jalap, powdered..... 8 ounces.
Santonine, powdered..... 8 ounces.
Wormseed, powdered..... 8 ounces.
Dry salt, powdered.....16 ounces.
Areca nut, powdered..... 8 ounces.
Cloves, powdered..... 8 ounces.
Mix.

Dose: One tablespoonful in bran mash.

Aperient Powder for Horses and Cattle.

Buckthorn, powdered.....1 pound.
Fenugreek, powdered.....1 pound.
Dried magnesia sulphate.....3 pounds.
Dose two to four ounces.

Hog Powder. A

Venetian red..... 5 pounds.
Sulphur ..... 5 pounds.
Salt, in fine powder, dry.. 5 pounds.
Air slaked lime.....35 pounds.
Magnesia carbonate..... 2 pounds.
Chalk, precipitated..... 8 pounds.
Soda, bicarbonate..... 5 pounds.
Directions for Use as a Preventive.

Give one teaspoonful in feed to each hog twice a day for three days, and afterwards once a day for a week until danger from infection is past; also give the hogs a little wood charcoal every day with feed.

Directions for Use, as a Cure.

When hogs are sick keep them in a dry, clean place and change the straw often. Give one-quarter of an ounce of this powder at each feed, well mixed with the food. Give appetizing food, but no corn; at the same time feed plenty of charcoal. Give them all the shade they require. Sprinkle their pens well with lime. Remove all manure and offal of every description. Do not allow any stagnant water to stay on the premises. Fill up all the old wallows and sprinkle them plentifully with lime.

Hog Powder. B

Sulphur .....2 pounds.
Dried sulphate of iron....2 pounds.
Air slaked lime.....8 pounds.
May apple, powdered.....1 pound.
Cayenne, powdered..... ½ pound.
Nux vomica, powdered.... ½ pound.
Colocynth, powdered..... ½ pound.
Corn meal.....2 pounds.
Mix.

Directions for Use as a Preventive: One teaspoonful.

As a Cure: One tablespoonful well mixed with the food. See directions on Formula A.

Constipation Powder for Cattle.

Aloin .....4 drams.
Ginger .....1 ounce.
Gentian ..... ½ ounce.
Anise ..... ½ ounce.
Mix.

Tonic Powder for Pigs and Horses.

Powdered gentian.....3 drams.
Powdered caraway.....1 dram.
Powdered licorice.....1 dram.
Whole coriander..... ½ dram.
Whole aniseed..... ½ dram.
This quantity for a dose.

Horse Powders.

Sulphur .....4 drams.
Potass, nitrat.....1½ drams.
Pulv. gentian.....1½ drams.
Pulv. fenugreek.....1 dram.
Pulv. zingib.....1 dram.
Mix.

This quantity (or a tablespoonful) for a dose.

Pig Powders.

Pulv. pot. nit..... 8 ounces.
Sulphur nig..... 8 ounces.
Antim. nig..... 8 ounces.
Ferri rubigo..... 4 ounces.
P. sem. carui..... 2 ounces.
P. sem. anisi..... 2 ounces.
P. foenugrec .....16 ounces.
Mix.

Dose: From a dessertspoonful to a tablespoonful twice or three times a week.

Embrocation for Bruises.

Calamine ..... ½ ounce.
Glycerini .....1 ounce.
Liq. ammon.....2 drams.
Aq. rose.....1 ounce.
Aq. ad.....6 ounces.
This should be used internally.

Cough Balls for Horses.

Nitrate of potash, powdered.4½ ounces.
Antimony tart, powdered..2 ounces.
Camphor, powdered.....1½ ounces.
Licorice, powdered.....3 ounces.
Molasses ..... q. s.
to make into mass. Divide into 24 balls.

For Insect Bites.

Liq. ammoniae fort.....4 drams.
Collodion .....1 dram.
Acid salicylic.....7 grains.
M.
Apply a few drops to each bite.

Horse Blister.

Cantharides ..... 3 ounces.
Euphorbium resin..... 1½ ounces.
Amyl acetate.....10 ounces.
S. V. R. to.....20 ounces.
Macerate for 4 days, filter, and wash the marc with spirit to 1 pint.

K. K. K. Horse Liniment.

Turpentine ..... 4 gallons.
Camphor ..... ½ pound.
Cantharides ..... ½ pound.
Oil cajeput.....2 pounds.
Spirits ammonia..... 2 pounds.

English Horse Liniment.

Oil cajeput.....13 ounces.
Spirits ammonia..... 6½ ounces.
Gum camphor..... 2 ounces.
Barbadoes tar..... 1 gallon.
Spirits turpentine..... 1¾ gallons.
Raw linseed oil..... 1 gallon.

Wire Fence Liniment.

Acetate lead.....10 ounces.
Litharge ..... 7 ounces.
Distilled water ....48 ounces.
Boil one-half an hour and stir well; let settle and decant off clear and filter balance. Pour into 2 gallons yellow cotton seed oil, stirring constantly whilst bottling.

Cattle Fattening Powder.

Opium, powdered.....1 ounce.
Fenugreek, powdered.....6 pounds.
Ginger, powdered..... ¼ pound.
Salt, powdered..... ¼ pound.
Gentian, powdered..... ⅛ pound.
Curcuma, powdered..... ¼ pound.
Caraway, powdered..... ¼ pound.
Mix.

Dose: One tablespoonful in feed twice a day.

Spavin Cure.

Tincture iodine..... 8 ounces.
Alcohol .....32 ounces.
Turpentine .....32 ounces.
Gum camphor..... 4 ounces.
Engine oil, neutral.....16 ounces.

Pills for Mange in Dogs.

Arsenic .....1 grain.
Ferri sulphat.....1 dram.
Ext. gentian.....1½ drams.
M.
Divide in 24 pills.

Dog Pills for Distemper.

Jalap, powdered.....2 drams.
Soc. Aloes, powdered.....2 drams.
Calomel .....2 drams.
Simple syrup..... q. s
to make 24 pills.

Mixture for Distemper in Dogs. A

Antim, tart..... 4 grains.
Sodii sulphatis.....1 ounce.
Dec. aloes co. conc.....1 ounce.
Aquae ad.....8 ounces.
M.
Dose: A tablespoonful, more or less, according to the size of the dog, every morning.

Mixture for Distemper in Dogs. B

Chlorate of potash.....2 drams.
Liquor ammon acet.....1 ounce.
Spirits of nitrous ether.....2 drams.
Tinct. hyoscyamus.....2 drams.
Water .....q. s. to make 4 ounces.
Mix.
Dose: One to 2 teaspoonfuls three times a day.

Poultry Spice.

To act as a general tonic and to stimulate the production of eggs during cold weather:
Powdered licorice.....6 ounces.
Powdered gentian.....1 dram.
Powdered capsicum.....1 dram.
Powdered fenugreek.....2 ounces.
Mix.

"Directions for Use: One teaspoonful for eight to ten full-grown fowls and chickens proportionally, to be given three to five times a week with the morning meal. These powders will also be found beneficial to young poultry, when wanted for the table, by giving them a keen appetite. Should an overdose be given it will not injure the birds, but the stated quantity is best. They help the fowls to produce eggs in the coldest weather, and also when kept in confinement eggs are produced in abundance."

Feed for Canaries.

Dried yolk of egg.....2 ounces.
Bruised poppy-seed.....1 ounce.
Cuttlefish-bone.....1 ounce.
Powdered sugar.....1 ounce.
Fenugreek .....1 ounce.
Capsicum .....4 ounces.
Mix.

Parrot Seed.

Hemp seed.....½ pint.
Millet seed.....½ pint.
Oats .....½ pint.
Grd. Indian corn.....½ pint.
Canary seed..... 1 pint.

Mocking Bird Food.

Lean raw beef or ox heart...5 pounds.
Hemp seed.....4 pounds.
Corn meal (yellow).....2 pounds.
Baker's bread.....2 pounds.
First. Cook the meat cut into small pieces and dry in the oven until brittle (about four hours); grind coarsely.
Second. Slice the bread thin and toast yellow and dry; grind coarsely.
Third. Grind hempseed and mix altogether.
This makes a good food that may be eaten freely. Occasionally mix some grated raw carrot with the food.

Cough Powder for Horses. A

Useful in the simple coughs of horses depending on catarrh:

Pulv. camphorae.....3 drams.
Potass. chlorat.....1½ ounces.
Pulv. fol. belladon.....1½ ounces.
Pulv. anisi.....2 ounces.
Div. in pulv. 6.
Give one twice a day in the food.

Cough Powder for Horses. B

For chronic cough in the horse the following are good:

Pulv. fol. aconiti.....6 drams.
Pulv. digitalis.....4 drams.
Arsenic. alb.....4 grains.
Pulv. anisi..... ½ ounce.
Div. in pulv. 6.
Give one every night in the food.

Cough Mixture for Dogs.

Tr. belladonnae..... ½ ounce.
Syr. scillae..... ½ ounce.
Tr. camph. co.....1 ounce.
Aq. ad.....6 ounces.
M.
Give two teaspoonfuls three times a day.

Colic Draught for Horses.

For Simple Colic.

Chlorodyni .....2 ounces.
Spt. aether. nit.....2 ounces.
Ol. lini.....1 pint.
M.
Give at one dose, and repeat in two hours, if necessary.

Colic Draught for Horses.

For Flatulent Colic.

Creolin ..... ½ ounce.
Ol. terebinth.....2 ounces.
Spt. ammon. arom.....2 ounces.
Tr. assafoetidae.....2 drams.
Ol. lini.....1½ pints.
M.
For one dose.

Draught for Hoven in Cattle.

Creolin .....1 ounce.
Oil terebinth.....4 ounces.
Spt. ammon. arom.....4 ounces.
Ol. lini.....1½ pints.
M.
For one dose.

Influenza in Horses.

Chlorodyni ..... 1 ounce.
Spt. aether. nit..... 2 ounces.
Liq. ammon. acet..... 2 ounces.
Aq. ad.....15 ounces.
M.
This dose is to be given every three hours during the first stage, when much shivering is evident.

Throat Liniment.

Ol. terebinth.....1 ounce.
Liq. ammon. fort.....1 ounce.
Ol. olivae.....1 ounce.
M.

Stimulating White Liniment.

Ol. terebinth.....16 ounces.
Camphorae..... 1 ounce.
Saponis mollis..... 2 ounces.
Aq. destil.....2 ounces vel q. s.
Mix the soap with the water; dissolve the camphor in the turpentine; mix the two, and bring down to the desired consistency with water.

Ointment for Grease and Cracked Heels.

Sulphur. subl.....1 ounce.
Plumbi acetat..... ½ ounce.
Creolin ..... ½ ounce.
Ol. eucalypti..... ½ ounce.
Vaselini .....4 ounces.
Lanolini .....4 ounces.
M. Ft. ung.
Apply twice daily.

Fly Blister.

Pulv. canthardis.....20 ounces.
Ol. terebinth.....12 ounces.
Acid. acet. fort..... 9 ounces.
Lanolini ..... 2½ pounds.
Vaselini ..... 2½ pounds.

Mix the first three, and allow to stand for twenty-four hours; then add the lanoline and vaseline, melted on a water-bath, and mix well, stirring until cold.

Healing Lotion for Horses.

Healing lotion for horses, suitable for sprains, bruises, sore throats, cuts, and wounds:

Solution of lead.....1 ounce.
Essential oil of camphor or cheap eucalyptus oil.....4 ounces.
Vinegar ..... 7 ounces.
Sesame oil to.....20 ounces.
Yolks of two fresh eggs.

Rub the yolks in a mortar, add gradually the sesame oil mixed with essential oil, then the vinegar, and lastly the solution of lead.

The oil may be colored with alkanet if considered advisable.

Remedy for Veterinary Purposes.

Remedy for veterinary purposes, suitable for horses, cattle, sheep, etc., for colic, colds, scour, pain after calving, lambing, &c.:

Tr. opii.....1 ounce.
Tr. hyoscyam.....1 ounce.
Spt. aether. nit.....1 ounce.
Sodae bicarb.....6 drams.
Pulv. zingiber.....2 drams.
Aq. camph. ad.....6 ounces.
Mix. Label "Shake the bottle."

For horses—Colic: One-half for a dose, repeat in one or two hours if necessary. For colds: One-half at night, and a hot mash some time after. For cattle—one ounce to 1½ ounces for a dose. Sheep and calves, 2 teaspoonfuls to 1 tablespoonful in the case of scour, to be given in rice and cold water, stirred together twice a day.

Colic Drench for Horses.

Ext. cannabis indicae.... 1 dram.
Spirit ..... 1 ounce.
Ol. terebinth..... ½ ounce.
Ol menth. pip.....20 minims
Sol. aloes (1 in 4- ad..... 4 ounces.

Dissolve the extract in the spirit, add the oils, and make up with the aloes solution.

Cough Powder for Horses.

Pulv. potass. nit.....2 ounces.
Pulv. glycyrrhiz.....4 ounces.
Pulv. scillae.....1 ounce.
Pulv. gentian.....1 ounce.
M. et div. in pulv. 12.

A powder with breakfast and supper, and one to be mixed with the contents of the nose-bag for day use.

VETERINARY TREATISE.

From the London Chemist and Druggist's Diary.

To provide matter which should be valuable not only to the country chemist, but also to his urban brother, has been the mark kept constantly in sight during the compilation of these notes. We believe that the notes on the diseases of pets, and of the smaller domestic animals, will, to an appreciable extent, secure this object. We trust, too, that the most experienced of our readers will find here some new ideas, and we wish to warn the tyro that the mere perusal of these notes will not make him an experienced veterinarian. Like all other things worth having a sound knowledge of veterinary practice costs time and patience, and those who cannot devote weeks and months to a course of study under men who make it their business to lighten the difficulties of the road must be prepared to expend more time and energy to obtain the same results.

We should strongly advise inexperienced readers to obtain some good standard work on the diseases of the horse or of cattle, and to begin to study it with the determination first to find it intensely interesting, and then to master it. Neither object is impracticable. It is difficult and invidious to select standard works for mention, and we disclaim beforehand all thought of making the list complete or satisfactory. New and revised editions have just appeared of two works whose names have long been household words—Blaine's "Veterinary Art," and Clater's "Cattle Doctor." There is a compendium work by Woodruffs Hill, and an anonymous work on the horse has recently appeared from the house of Cassel & Co. Tegetmeier and Piper seem the leading authorities on poultry and other domestic birds. Youatt's works are classical: Finlay Dunn, and Tuson are names well known to all our readers.

The formula given at the end of the notes are not mere untried recipes; they come from the note books of experienced and intelligent men, and we can claim for them that any failure to produce the desired results will be the fault of the manipulation, not of the formula.

The notes themselves have been compiled partly from the valuable series of articles contributed to The Chemist and Druggist some twelve years ago by Mr. W. Hunting, M. R. C. V. S., and these have been supplemented from various sources, English and foreign. The whole has been supervised by an eminent veterinary surgeon.

HORSES.

Administration of Medicines.—Powders must have no disagreeable taste, nor any marked odor, execept a few vegetable aromatics like coriander, caraway and anise. They are best mixed with damp food.

Draughts are the only possible form of administering some remedies. When the head is raised to administer them, the animal, in cases of sore throat, is apt to cough and allow part of the draught to enter the windpipe. Horses can retain fluids in the mouth a long time without swallowing, and in this way sometimes reject medicine.

Electuaries made by mixing the remedy with honey or treacle are the best form of medicine for sore throats.

They should be smeared on the tongue.

Balls are the handiest form, and ensures the ingestion of the whole dose. They should be cylindrical, not more than 1 inch in diameter and 2½ inches long. In cases of sore throat they should never be given, as they irritate the part and may be coughed back into the nose, whence it is extremely difficult to remove them. Nearly all balls are thoroughly dissolved in the stomach in less than half an hour.

Apoplexy affects horses employed in agricultural labor during the heats of summer. The animal falls as if struck by lightning. It lies without any sign of life but the heaving of the flanks and copious perspiration. Death follows quickly. Treatment, to be successful, must be very prompt. Remove the patient to a cool spot; douche the head with plenty of water, very cold or mixed with a little vinegar; let blood, and repeat this if the horse is young and fat; curry it vigorously; administer drinks and an enema of nitre. When the symptoms are modified, give purgatives and diaphoretics.

Ascites, or Abdominal Dropsy, appears gradually; shows itself by the swelling of the belly and members, and above all by the fluctuation of the collected fluid. It often follows pleurisy. When accompanied by symptoms of inflammation of the bowels it demands antiphlogistic treatment, otherwise we must endeavor to increase the secretions. Diuretics should be given with ammonia and aromatic infusions, and the skin well and repeatedly curried. Puncture succeeds in very few cases.

Bleymes, bruises, and other accidents or injuries to the foot and coronet are of frequent occurrence in the horse, both in the front and hind feet. They result from treads, overreaches, being run over in crowded thoroughfares, or as in railway horses, which are frequently injured by getting entangled in the points, switches, and metal bars of the lines. The best treatment is to physic, give sloppy food, and, for a time, no corn. Remove the horse's shoe, and let it remain off, pare out the foot, well poultice the foot with warm bran, keep the animal perfectly still and quiet until the lameness disappears.

Capped Elbows occur on the point of the ulna, and are caused by the animal lying on the rough sharp heel of the shoe. Treatment: Give purging medicine, and apply friction to the parts affected, with a stimulating liniment. If the case will not yield to the treatment, it may be necessary to blister the parts. In the case of capped elbows, have the horse shod short at the heels, and the shoes made smooth and rounding.

Capped Hocks are caused by injuries to the points of the hocks in the hind legs, causing a fluctuating tumor.

Catarrh is inflammation of the mucous membrane, accompanied by excessive secretion of mucus.

Cold in the Head is inflammation of the mucous membrane of the nose, with discharge from the nostrils. The animal is at first slow and drowsy in its movements, the skin is dry, the membrane of the nose redder than usual, the mucous secretion temporarily arrested, becomes more abundant, and is at first watery and limpid, falling in drops, then white and viscid, falling in flakes. The disease lasts 15 to 20 days; if longer there is fear that it will become chronic. In slight cases the animal should be kept from draughts, damp and cold, frequently rubbed down, and covered with care. The food should be reduced, warm

mucilaginous drinks given, and the nostrils fumigated with steam. When the inflammation is severe with fever, redness of the mouth, and injection of the conjunctiva, the horse must be bled, dieted, soothing electuaries and emollient enemas should be administered.

Corns are quite unlike those of men. They occur at the angle of the sole between the outer wall and frog, and are bruises of the sensitive structures within the hoof, the result of uneven pressure of the shoe. The discolored horn is merely a symptom like that seen in our own nails when injured. Short shoes, or shoes fitted to leave at the extremity of the heel a space without bearing, are almost sure to produce corns.

Treatment: When the bruise is so severe or old standing as to have caused the formation of matter, and never in any other case, the horn should be cut away to allow the escape of the pus. If the wound is in a healthy state a little pledget of tow, dipped in tar, should be placed over it and the shoe readjusted, care being taken to place no pressure on the wall near the injury.

If matter is not present never cut away the blood-stained horn. It will take at least six weeks to replace it. Remove the shoe, foment the foot for three or four hours, then carefully replace the shoe, taking a level bearing throughout. If possible give rest for a day or two.

Coughs arise from a variety of causes, such as irritation of the larynx, air-tubes, or lung; pneumonia, pleurisy, and some nervous derangements. The treatment must vary with the cause, and the cause must be discovered by the other symptoms.

Irritation producing cough may result from the presence of foreign bodies, or mucus, when the foreign body must be removed and expectorants may be given; or it often arises without the presence of obstructions of any kind, but simply from inflammation of the sentient respiratory nerves —Expectorants should not be given in such cases.

A. Irritation of the Larynx.—(1) Acute: Symptoms.—Cough loud and hard, soon becoming softer as the membrane is covered with purulent mucus. Swallowing is difficult; even water being returned through the nose.

Treatment: Avoid dry, hard food. Balls are nearly certain to be coughed back, and often lodge in the nose. Draughts require the head to be raised in a way favorable to choking. Electuaries are the best form of medicine. Place a roll of flannel in hot water, wrap it round the throat, and cover it with some waterproof substance. Keep the bowels open, and use one of the following electuaries:

I.

Camphor ..... 4 drams.
Ext. belladonnae..... 4 drams.
Acid. acetic. dil..:..... 2 ounces.
Mellis seu theriacae.....10 ounces.

A tablespoonful twice daily to be smeared on the tongue.

II.

Tannin ..... 2 drams.
Spirit. vini rect..... 2 ounces.
Mellis .....10 ounces.

To be given as above.

(2) Chronic:—Symptoms: Cough loud and hard, but not frequent, occurring chiefly when the animal is changed from the stable to the fresh air, or vice versa. No general symptoms.

Treatment: Give a cough ball, such

as one of the following:

I.

Opii pulv..... ½ dram.
Scillae pulv.....1 dram.
Aloes pulv.....1 dram.

Make into a ball with common mass or linseed-meal and treacle. One every day.

II.

Camphor .....½ dram.
Opium .....½ dram.
Digitalis .....½ dram.

Made as above. One every day.

III.

Ext. belladonnae.....1 dram.
Ext. hyoscyami.....1 dram.
Ipecacuanhae .....1 dram.

Made and given as above. A seton may be placed in the throat, and the animal allowed easy work if the weather is open.

B. Bronchitis, or Inflammation of the Lining Membrane of the Air-tube. Symptoms: Cough harsh and wheezing, accompanied by a loud, rough noise in the windpipe.

Treatment: (1) General, as in simple fevers; (2) Local. Protect the neck and chest with rugs, and in chronic cases apply a blister. Give the following:

Camphor .....1 dram.
Digitalis .....1½ drams.
Potass. nitr.....1½ drams.

Make into a ball with linseed-meal and treacle. One to be given every day.

Pneumonia and Pleurisy are serious diseases, which require professional treatment.

Broken Wind.—Cough short, loud, hollow, with double-action of the flanks in respiration. The diet must be of the best quality. Avoid bulky, innutritious food, and, above all, mouldy or dusty hay. Linseed boiled, and given cold with the corn at night, is excellent in some cases. The two useful medicines are arsenic and creasote. Give arsenic in 3-grain doses daily, or creasote in ½-dram doses made into a ball with linseed and treacle. When they offer them for sale, horsecopers "load" broken-winded animals by giving them a mixture of shot and tallow, or a pint of olive oil half an hour before showing them.

Cracked Heels are commonest in wet weather among low-bred horses with round shanks, which are also the most liable to thrush and cracks at the back of the knee and front of the hock. The cracks of the hock, knee and heel vary from a small split to a large wound, accompanied by swelling of the leg and lameness. For mild cases use ointment of carbonate or oxide of zinc. Bad cases, with swelling and suppuration, will require warm fomentation or a poultice for a night, followed by a lotion of zinc sulphate (½ dram to 1 ounce) with a few drops of carbolic acid. When the sore is fairly dry use zinc ointment. A few diuretic balls will help the case.

Cystitis—Inflammation of the Bladder.—Symptoms: Frequent movements of the hind legs and attempts to urinate, thirst, movements of the tail; the horse turns to look at its flanks. Bleed slightly twice; give mucilaginous drinks and clysters, and apply a poultice of boiled bran to the loins. The bladder may be emptied by carefully passing the hand into the rectum and pressing gently downwards with the whole surface of the hand. As the patient improves give bitter decoctions with nitre. When the inflammation is due to stone in the bladder, this may be removed by operation.

Diarrhoea ordinarily cures itself. If it becomes serious the horse should be

put on mashes, bled, and emollient enemas administered. After a day or two give 1½ ounces of a mixture of

Juniper berries.....4 parts.
Rhubarb .....2 parts.
Ginger .....1 part.

If the diarrhoea follows indigestion give some warm ale and reduce work and food for a few days.

Diarrhoea, when it results from inflammation of the intestines, is somewhat serious. The evacuations are mucous, and more or less fetid; there is much thirst and little appetite; strength and health gradually fail. The evacuations are discharged without apparent pain, and mostly while at work. Bleeding must be resorted to if the inflammation is acute; solid food must be withheld in part; emollient drinks may be given, or a drench containing opium or extract of popples; enemas of decoction of linseed, small in bulk, should be given. As the disease diminishes the ordinary diet may be resumed.

Chronic Diarrhoea is not helped by bleeding. The skin must be kept active by grooming and covering; the food should be digestible and given in small quantities at a time; work should be light, and the water the horse drinks looked to. As the diarrhoea lessens, a little parched barley or a few beans may be mixed with the oats.

Dysentery shows itself as gripes, acute pain in the belly, and violent and frequent efforts to expel excrement, which is sometimes bloody. It should be treated like acute enteritic diarrhoea.

Eczema is of two kinds, simple and acute or malignant; the latter sometimes develop into ulcers. The first symptom is the dull, rough, discolored coat, always covered with powdery dust, which seems to renew itself as often as it is removed by the curry-comb; afterwards are formed pustules of different kinds, purulent pimples, crusts, sometimes dry, sometimes moistened with an acrid, stinking discharge, finally with ulceration of the skin and itching, so violent that the horse flays itself by rubbing against surrounding objects.

It is almost always enough in simple cases to groom the horse with care, and to give a gentle purge, if necessary. In severe cases bleed the horse, purge once or twice, soften the skin by emollient lotions (decoctions of mallow or linseed) applied for two or three days; then rub the affected parts once daily with citrine ointment; immediately after give a bran mash with 2 ounces of powdered guaicum-wood, and keep the animal warm. The ointment should be washed off with soap and water before each fresh application. If the disease is inveterate the animal should, in addition, be treated as in farcy. A lotion of equal parts of liquid arsenicalis and camphorated spirits applied twice or thrice daily is very efficacious.

Enteritis, or Inflammation of the Bowels.—When it appears suddenly it is super-acute. It is accompanied by extremely severe pains in the belly; the horse is much agitated and moves incessantly, stamps its feet, paws the ground, looks at its belly, lies down and rises suddenly; the breathing is rapid and short, the nostrils dilated, the eyes anxious; the body is covered with sweat, the pulse is full and accelerated; the bowels are confined, the urine often reddish and passed with difficulty; the pain continually increases without a moment's pause, and often causes death. If the animal is entire inguinal hernia must be looked

for, and, if present, treated surgically. The animal must be bled repeatedly. Tepid mucilaginous decoctions must be given as drinks, with emollient enemas, and very scanty diet; grooming and gentle exercise are auxiliaries. Inflammation of the bowels often simulates diarrhoea, which see.

Farcy.—One of the diseases on the lists of the Contagious Diseases (Animals) Acts, 1878. Any person being in possession of an animal affected with farcy, or a disease supposed to be farcy, must give notice to the nearest police constable, or to the veterinary inspector of the district in which the animal is.

It resembles glanders in contagiousness and its fatal effects in man. There are enlarged glands fixed to the jawbone, no ulcers or discharge from the nostrils, but small swellings or "buds" down the inside of the limbs, along the side of the flanks, and on the neck, varying in size from a pea to a walnut, at first hard and painful, sometimes becoming softer, and finally discharging their purulent matter. The advent of the attack is usually attended by lameness and fever.

Treatment should consist in the administration of copper biniodide, canthárides or arsenic as tonics, to be continued for a lengthened period, as powders with the food. Giving balls is most dangerous to the operator. One of the following forms may be used once daily:

I.

Pimentae pulv.....2 drams.
Cupri sulph..... ½ dram.
Zinci sulph..... ½ dram.
Canth. pulv.....5 grains.

II.

Canthar. pulv..... 5 grains.
Ac. arsenios.....10 grains.
Ferri sulph.....2 drams.

III.

Gentianae pulv.....2 drams.
Canthar. pulv.....5 grains.
Cupri diniod..... ½ dram.

As soon as the "buds" contain matter they should be laid open and dressed with strong carbolic acid, which generally dries up and disperses the swelling quickly. While the buds are not discharging the animal is not dangerous as a centre of contagion, and is useful for work if the worst symptoms are subdued. According to the French, a liniment of 9 parts olive oil and 1 part liquid plumbi diacet. should be applied to the buds to accelerate the formation of the matter. Meanwhile give one of the following balls, night and morning:

Calomel .....1 ounce.
Ammoniacum .....2 ounces.
Asafoetida .....2 ounces.
Hard soap .....4 ounces.
Honey .....q s.

To be made into eight balls. This should be exchanged every four days for a simple purge of calomel, aloes and soap. Give with each ball barley-water with some powdered juniper. If treatment causes too much irritation suspend it for a day.

Fever is indicated by increased heat, rapid pulse and breathing, with arrested secretion and excretion. It is frequently caused by cold, and is known as influenza; it then runs a definite course, and terminates in a quick return to health. When complicated by derangements of the air-tubes or of the digestive apparatus, it is known as catarrhal, gastric, or bilious fever.

In the first stages a stimulant must be given, followed shortly by a diure-

tic. The following combination may be used:

Etheris .....1½ ounces.
Sp. pimentae .....3 ounces.
Liq. ammon. acet conc.....1½ ounces.

A wineglassful, when required, in as much water; to be repeated in two or three hours, if necessary. An ordinary dose of aloes must not be given during violent fever, as it is apt to cause superpurgation. Four ounces of linseed oil or Epsom salts are sufficient. Ammonium carbonate may be given twice daily in 2-dram doses. The body should be well clothed, fresh air and cold water allowed freely, and green food, boiled barley, and linseed given as laxative foods.

Founder, or Fever in the Feet, is a disease of the horse's foot, in which the sensitive layer immediately within the hoof is congested or even inflamed. It is commonly caused by overwork, such as a long journey on a hard road, or hard work in horses out of condition.

Symptoms: First, frequent shiftings of the feet, and signs of pain, as quickened breathing and pulse. Next, fear of raising one foot lest extra weight be thrown on the other, with swaying of the body backwards and forwards without the feet being moved. If force is used the animal moves as though his back was injured, and puts the heel most markedly on the ground. When the fore feet alone are affected, as is usually the case, the hind feet are drawn forward under the belly, so as to lighten the weight on the others. The affected feet are hotter than usual, and throbbing is felt above the coronet.

Treatment: Never bleed. Give a dose of physic, remove the animal to a smooth, hard-bottomed loose-box, with a light covering of clean straw. The shoes must be removed. Give a good broad bearing surface with the rasp, but leave the sole untouched. If the foot is level when the shoes are removed lower the toe and heels a little, to produce a sort of rocking surface. This relieves the pressure on the front of the foot, which is the part most affected. Use warm fomentations till the acute pain subsides, but no longer. Then use hand-rubbing to the limbs, and give gentle walking exercise. When the shoes are replaced fit them to the rounded surface of the foot, and leave the sole as strong as possible. Simple cases generally recover in a week, or at most two. Some cases are very tedious, and result in "pumiced foot"—a permanent incurable deformity; careful shoeing will keep sound even such animals.

The French recommend bleeding from the jugular, repeated if necessary; removal of the shoes, bathing in running water, astringent poultices of soot and vinegar, or clay with a strong solution of iron sulphate; scarification of the coronet, and friction with oil of spike on the hocks. If the disease is long standing use emollient poultices and rasp the wall of the hoof; but this rarely succeeds.

Glanders and farcy run a slow course in horses, but are speedily fatal to man and other animals, to whom they can be communicated. Cases of glanders must be reported to the authorities. See farcy.

Glanders is distinguished by the discharge from the nose of thin sticky matter, generally from one nostril. The lining membrane of the nose is ulcerated in one or more places, sometimes to perforation of the septum. The glands inside the lower jaw on the same side as the nasal discharge are indurated. the swelling being cir-

cumscribed and fixed to the jawbone. The presence of the discharge, ulceration and fixed swelling prove the existence of glanders. The chances of cure are small, and the risk to human life very great, so that all well-marked cases should at once be killed. Treatment, if decided on, should consist in frequently washing out the nose with a solution of potassium permanganate or carbolic acid. Feeding must be liberal.

Grease is a skin disease affecting the legs, and commonest among heavy cart-horses. It varies in extent from a small wet-looking spot covered with short broken hairs to a red, painful, granulating surface with a stinking discharge, covering the leg, and if not checked in its progress will form into swellings, grouped together in clusters; and when it has reached this stage it is commonly called "Grapes." It may be prevented in a great measure by having the legs washed with warm water and well dressed with a sponge first, finishing with a towel; the legs should then be bandaged with flannel. It should be dressed daily with the following lotion: Sulphates of zinc, copper and iron, of each 1 pound, dissolved in 1 gallon of boiling water, with the addition of 4 ounces of carbolic acid. Keep the animal at work, except during the first two or three days. If the leg swells stop the application for a day and give a purgative. The following is another treatment: Prepare the animal by dieting, enemas, bathing and emollient poultices, and if the pain is severe, by bleeding. Then make the legs clean, shave off the hair if necessary, and bathe the parts several times a day with Goulard's water. Toward the end of the case substitute a lotion of warm aromatic wine or camphorated spirit in which some soap is dissolved. Setons should be inserted in the chest if the fore legs, or in the buttocks if the hind legs, are attacked. Bitters and sudorifics, combined with antimonials, should be given internally, such as powdered gentian with kermes mineral, guaiacum wood with diaphoretic antimony. The cure will be completed with one or two purgations.

Gripes, or Colic.—Symptoms: The name is applied vaguely to all cases of abdominal pain, but is here limited to cases of indigestion, accompanied by pain, pulse never hard nor exceeding 44 beats a minute; pain violent, but with periods of remission.

Treatment: Do not allow the animal to be trotted about. Tobacco, opium and turpentine must never be given. Turn the horse into a loose box, prevent its lying on its back or rolling over by the judicious use of the whip. Administer a draught composed of 1 ounce each of sp. aeth. nit., sp. pimentae and tr. belladonnae, in 1 pint of warm water, and repeated in half an hour if necessary. A physic ball should be given a day or so later. Injections of clean tepid water should also be used, care being taken to introduce the fluid gently, so as not to provoke rapid expulsion.

Hoof Ointments are necessary to keep in good order the feet of all horses that are shod. They must be thick enough not to spill if upset; not sticky, dark in color and easily washed off. There are two classes: (1) Those which are used for bad feet as a protecting agent, and contain no saponifying ingredient.

I.

Barbadoes tar.....
Burgundy pitch.....
Russian tallow.....

Equal parts.

II.

Stockholm tar.....2 pounds.
Russian tallow.....1 pound.
Venice turpentine..... ½ pound.

In each case melt together the last two ingredients, then add and thoroughly mix the tar.

(2) Those used regularly as preventives and beautifiers.

I.

Stockholm tar.....3 pounds.
Soft soap.....4 pounds.
Fish oil..... ½ pint.

II.

Stockholm tar.....4 pounds.
Soft soap.....4 pounds.
Tallow .....2 pounds.
Fish oil.....1 pint.

The latter is of better consistence. Soft soap by itself tends to make the hoof brittle.

Jaundice, or the Yellows, is indicated by a marked yellow coloration of the white of the eyes, and the mucous membrane of the mouth and the nostrils; the urine is deep yellowish brown, the faeces hard and dry; the horse is constipated, dull and heavy, and loses its appetite. Do not bleed unless you want to kill the patient; administer two or three enemas in the evening of the same day; give next day a purge, which should be repeated once or more at intervals of some days. Give as the ordinary drink a decoction of the root of asparagus or strawberry with 1 ounce of nitre and several handfuls of barley-meal; and when the purgative is not administered give, night and morning, ½ ounce to 1 ounce of powdered rhubarb, either in a ball or mixed with wine; bran or barley-meal, chopped straw, and carrots should form the bulk of the food.

Mud fever occurs in wet weather. There are simple febrile symptoms coincident with an eruption on the skin of the legs and belly, or on those parts most exposed to the splashing of the mud. This may, to a great extent, be prevented by never having the legs washed when dirty, but allowing the mud to dry on, and then carefully brushing it off. As horses that have been recently clipped are more susceptible to it than others, it is a good plan to leave the hair on all the legs. Have the animal thoroughly cleaned, and if feverishness is marked give 1 ounce each of spirit of nitrous ether and solution of ammonium acetate; if necessary repeat in 12 hours. If there are any swellings caused by the friction of the bellyband or martingale, give daily for a week 2 drams each of rosin and nitre made into a ball with linseed-meal and soft soap.

Open Joints.—These are openings through the tissues which allow the escape of the joint oil or synovia. Treatment: The motion of the joint must be limited for a time by splints or otherwise. The escaping synovia must be coagulated so as to form a plug and stop the opening. For this purpose the best applications are (1) silver nitrate applied in the solid form, and (2) corrosive sublimate in solution (1 dram in 1 ounce spirits of wine) applied with a feather. Care must be taken not to introduce them into the joint, but merely to touch the escaping synovia. Never remove the plug of coagulated synovia from the opening when dressing a case. The following form for open-joint powder is not so good as the two remedies

mentioned, as albumen is re-dissolved by alum in excess.

Alum.....
Ferri sulph..... } Equal parts.
Myrrh.....

Finely powder and sprinkle on the part.

Ophthalmia begins suddenly, with an extra flow of tears, partial closure of the eyelids and intolerance of light; the eyelids may become swollen, and the watery discharge assume a purulent form. In examining the eyeball the horse's head must not be exposed to a bright light, as he then resists any separation of the lids. In a moderate light the lids are voluntarily separated a short distance if the case be mild and the head left free. When necessary to open the lids with the finger and thumb, the globe of the eye must not be pressed, as this forces forward the haw and spoils the view. On exposing the eyeball, the white part is seen to be bloodshot, the iris may be dim or quite cloudy, the inside of the eyelids is bright red.

Treatment: First make sure that no oathusk or hayseed is concealed under the lid. It will generally be found at the upper and outer corner of the top lid, and must be speedily removed. The following is an effectual though rough method, which is better than the unskillful use of forceps: Cover the forefinger with a fold of a silk handkerchief, place it under the upper lid at its inner part, then pass it with a circular motion, outwards, downwards and back to the inner corner by the lower surface of the globe.

When once the eye is bloodshot, warm fomentation should be persevered in for at least an hour, and repeated for half an hour three or four times a day. An anodyne of 1 part of laudanum to 16 parts of water may be applied with a camel's-hair brush. When the redness and pain are abated, use collyria of alum, nitrate of silver or zinc sulphate (5 grains to 1 ounce of distilled water.) Apply with a camel's-hair brush three or four times a day, and remit for a day if too irritating.

Sometimes the lash of a whip causes an abrasion of the eye; olive oil is the best application.

The eye must be cleansed of all discharge before applying collyria. If a syringe is used the injection should always be at the outer corner of the upper lid, as the fluid then follows the natural course of the tears. The horse must not be turned out to grass, as feeding from the ground causes a rush of blood to the head; also the stable windows should be covered with green blinds. Treatment: A good-sized dose of purging medicine will have more effect in lessening the symptoms and reducing the local inflammation than anything else.

Pleurisy is a common and severe disease, but not necessarily fatal if promptly treated. It generally follows a chill taken while warm from exercise. It is inflammation of the lining membrane of the chest.

Symptoms: First, a shivering fit and feverishness; the pulse is accelerated; inspiration becomes quicker and shorter than expiration; there is generally a short, painful cough, pain on pressure between the ribs and great disinclination to move the fore limbs. There is no heaving of the flanks as in pneumonia, but the abdominal muscles are contracted to fix the chest, giving the flank a peculiar tucked-up appearance. This stage is followed by the development of "water in the chest," which has a tendency to in-

crease so as to compress the lungs fatally. The disease terminates in six or seven days.

Treatment: Never bleed nor apply local stimulants or blisters, nor give aloes, calomel, antimony or the like. Put the animal in an airy loose-box, clothe it well and administer 6 ounces of linseed oil and 1 of spirits of nitre, or 4 or 5 ounces of Epsom salts. To allay the pain, dip a rug into boiling water, wring it out and quickly apply it to the chest; keep it in position by another rug and roller, and as soon as cool replace it by another. When the acute symptoms have passed give the following twice a day:

Ammon. carb.....1 dram.
Zingib. pulv.....2 drams.
Resinae pulv.....1 dram.

Made into a ball with linseed meal and treacle. Should the pulse remain at 50 or 55 per minute, and the breathing be labored, considerable effusion in the chest is probably the cause; auscultation will detect it. If present, administer a mixture of equal parts of sp. aeth. nit. and liq. ammon. acet., in ½-ounce doses, three or four times daily. Apply blisters to the sides, and, as a last resource, try tapping. Give the animal good food—turnips, carrots, grass, with boiled linseed and barley, and a constant supply of clean cold water.

Pneumonia has much likeness to pleurisy, and frequently follows it. The cough is not so dry, the pain more deeply seated, inspiration prolonged, expiration short and painful, pulse full, accelerated, and sometimes soft and irregular. The animal complains when an attempt is made to lift the head, keeps the fore legs apart, refuses to lie down and to move. The treatment recommended for pleurisy must be actively employed. The malady terminates, favorably or no, in 12 or 15 days.

Pole Evil—A fistulous wound at the back of the head, behind the ear. Rub together equal parts of unguentum populeum and mercury; rub the swelling well with this for three days. If it does not disappear, but breaks, open the wound thoroughly, and cleanse it with a mixture of equal parts of tinctures of myrrh and aloes twice daily till it is healed. If the pus is putrified, explore the wound with a sound and press out all matter; then fill the wound with tow steeped in the above tincture. If the wound heals before the discharge of matter has ceased it must be reopened.

Pulmonary Catarrh is indicated by difficulty of breathing, abundant discharge of mucus from the eyes, nose, and mouth, and cough, with or without fever. Give warm, sweetened mashes, with 2 or 4 drams of nitre and 4 ounces of oxymel of squills to a bucketful. Give two or three doses of the following cough balls:

Marshmallow ..... 4 ounces.
Licorice ..... 4 ounces.
Elecampane ..... 2 ounces.
Kermes mineral ..... 2 ounces.

Make into 12 balls with honey.

In every case stimulating and irritating medicines must be carefully avoided.

Purgatives: The best is Barbadoes aloes, the next Cape aloes in doses 1 dram larger. The following form is from Gamgee's "Veterinarians' Vade Mecum":

Aloes ..... 8 parts.
Rectified spirit ..... 1 part.
Treacle ..... 3 parts.

Melt the aloes and treacle in a water-bath, and then add the spirit. The dose of aloes for a carriage-horse is 5 drams, for a heavy cart-horse, 6 drams. For every dram of aloes take

one and a half of the above mass. The addition of gentian increases the action of aloes, as does a previous course of iron. Ginger seems a useless adjunct.

Pursiness attacks animals which have too little work and a heating diet. The symptoms are difficulty of respiration, irregular heaving of the flanks (especially after trotting), a dry cough, and sometimes an emission of whitish mucus from the nose. The most characteristic symptom is the kind of expiration, best seen after exercise while the animal is eating oats. The expiration has hardly commenced when the movement of the flanks is suddenly arrested, then recommences, and is completed quietly. Confirmed pursiness is incurable, and young animals should be treated by giving no hay and feeding principally on oats and chopped straw.

Quinsey is acute inflammation of the throat, which soon causes suffocation if not treated in time. Sometimes an abscess forms in the vicinity of the throat at the back of the tongue. Do not bleed on any account. Linseed poultices should be placed on the throat; barley-water, sweetened or acidulated, should be given as a drink or a gargle. Mild diet should be provided without delay. Gangrenous quinsey is very fatal; it requires similar treatment, acidulated drinks being specially indicated.

The following is another method of treatment: Make an electuary of 1 part each of nitre and sal-ammoniac, and 2 of Glauber's salt with water and meal. Smear on the tongue five or six times daily a quantity twice the size of an egg. Rub the swollen parts three or four times daily with a mixture of 2 parts each of mercury and marsh-mallow ointment with 1 part of camphor liniment. Protect from chills, and give only warm water to drink.

Quittor.—This is an opening (properly speaking a sinus) in the coronet of a horse, discharging matter and accompanied by pain and swelling. It is the result of an injury—commonly a wound by a nail—setting up inflammation and suppuration inside the hoof. The matter, unable to escape through the horn, finds its way to the coronet, and is discharged through the skin. If the suppuration continues long either some dead tissue is lodged in the part or the wall of the sinus is thickened. Blisters, firing, and even incision, have been tried. The older farriers filled a small paper cylinder with corrosive sublimate and placed it in the sinus, but the best remedy is the following solution injected by a syringe:

Corrosive sublimate..... 1 dram.
Hydrochloric acid ..... 10 minims.
Rectified spirit ..... 1 ounce.

To be used once a day for 2 days, then diluted to half its strength or used only once in three days. If there is much pain after a fortnight apply a smart blister. Give a purgative occasionally, and at the beginning of the treatment a dose or two of opium to allay the pain. Solutions of the sulphate of zinc, iron or copper are of little use.

Ringworm—See under Cattle.

Sandcrack.—This name is applied to all fissures in the wall of the hoof, extending from the coronet downwards. The fissure, at first very small, runs in the direction of the fibres, and never reunites. The cause must be removed,

and the fissure prevented from opening wider. In about nine months the growth of the wall will remove the fissure. After the shoe has been carefully fitted the hoof should be bound like the handle of a cricket bat with waxed string not thicker than a crow-quill. If the cracks are wide they may be previously filled with the following composition:

Composition for Repairing Horses' Hoofs: Melt 1 part of ammoniacum in an iron ladle; add 2 parts of gutta-percha previously softened in hot water and cut in small pieces. Stir till thoroughly mixed and make into rolls. When wanted it must be melted, and a few touches with a hot knife will leave it smooth and not distinguishable from the hoof.

Seedy Toe is a condition of the horse's foot in which the wall is separated from the sole and sometimes from the structure attaching it to the coffin-bone. The space cannot be seen without removing the shoe, but the hoof gives a distinctly hollow sound when tapped with some hard substance.

By good shoeing a horse may be kept tolerably sound and at work, but if valuable it can be radically cured in about three months. Remove every portion of detached horn, artificially protect the foot, and by stimulating the coronet promote the reproduction of the horn.

Sore Shoulders.—If the skin is tender but not broken, smear with a mixture of glycerine, 1 ounce; fuller's earth, 2 drams, boiled together and used cold. A simple skin wound should be washed with salt and water, which is increased in money value by coloring with tinct. lavand. co. When neglected a deep circular sore results, the margins become callous, and the centre is covered by a hard scab, or sit-fast, under which is always matter. The scab must be removed, and the whole sore dressed with lunar caustic or solution of corrosive sublimate in spirit of wine (1 dram to 1 ounce). In very bad cases make an incision right through the sore to change it from a circular to an elliptical wound and start healthy granulations. Chamois-leather pads, stuffed with horsehair, should be stitched on the harness above and below the sore to relieve pressure. The following is also recommended.

Wash the place with fresh water and at times moisten it with brandy and water. If there is a water-blister puncture it in several places with the fleam or bleeding instrument and rub it three or four times daily with a mixture of 3 parts of mercurial ointment, 1 part of potashes. The sit-fast should be washed daily with decoction of camomiles mixed with Goulard's water till it separates at the margins; cut it off little by little as the wound heals. If there is matter beneath the head, cut off the hard skin and strew alum or blue vitriol on the wound and keep it clean. The sit-fast may be softened with grease, cut off, and treated as above. If matter is found the sore must be promptly opened, as it quickly spreads. The incision must be made to the bottom of the wound and all its cavities. After the bleeding has stopped wash the wound, lay tow in it, repeat this next day, placing rosin ointment on the tow, and continue this till cured.

Chaulmoogra oil has been introduced into the medicine chest of the British cavalry regiments, on account of its remarkable effect upon horses

that have been "wrung" with the collar or have sore backs.

Sores in the Mouth.—Take 1 part of vinegar, 2 parts of water, dissolve in it a little alum and honey. Tie a cloth on the end of a stick, and mop out the mouth with this solution. Avoid hard foods, and give bran mixed with Glauber's salt.

Sprain.—Chronic or old standing must not be treated like acute or recent sprains. Even the slightest demand careful treatment.

In the first stage of recent sprains inflammation must be kept down. Foment continuously with cold water, with one of the additions subjoined, until the intense pain and heat and all violent symptoms have passed off. Spirits of wine or tincture of arnica, or a mixture of equal parts of common salt, sal-ammoniac, and nitre (dissolved to saturation), may be added to the fomentation.

If much swelling or congestion exists foment with hot water, mixed with belladonna or opium.

In either case the reaction which follows if the fomentation is intermitted, is decidedly injurious.

When the violent symptoms have disappeared apply a dry bandage, with occasional mild hand-rubbing for a day or two. Follow this by a mild stimulating application, such as liniment of ammonia or iodine, or tincture of cantharides, or the following:

Castor oil, linseed oil, and
turpentine, of each.....2 ounces.
Shake and add
Strong ammonia and water,
of each .....3 ounces.

Only after the failure of this treatment should blisters be applied, once or twice, and as a last resource firing and a run at grass. Rest for a considerable time is absolutely necessary. Keep the bowels open.

Stomach Staggers, or Grass Staggers, is an affection of the brain caused by impaction of the stomach. It is commonest among young animals at grass in the autumn.

Symptoms: Dullness, disinclination to move, fullness of the abdomen, perhaps distention and constipation; breathing slow and heavy, pulse slower than usual, 30 to 35 a minute instead of 40. It comes on suddenly and soon ends in death or recovery.

Sleepy Staggers, a similar disease, comes on gradually, runs a slower course, and is not attended by the marked fullness and constipation of stomach staggers.

Treatment: As the stomach is packed with food, balls and powders can hardly be assimilated. Strong solutions should therefore be given. The horse cannot vomit, so that relief must be obtained through the bowels. Give aloes in six or eight dram doses in as little water as possible, and in bad cases 10 to 15 drops of croton oil. To arouse the stomach to action give ½ ounce of ether and 1 ounce of tincture of ginger every three or four hours, or a wineglassful of any spirit with 2 drams of carbonate of ammonia at similar intervals. Should a change for the better take place, stop all medicines for a time, and allow no food for at least 12 hours. Should the symptoms remain urgent, and the head symptoms increase to blindness, give larger doses

of ammonium carbonate and repeat the croton oil. Enemas are useful as adjuncts.

Strangles.—Inflammation of the mucous membrane of the nose and back of the mouth, with swelling of the glands of the jaw, which attacks sooner or later almost all young horses, especially when they are suddenly brought from grass to dry forage. The age of the horse, the cough, the distress of the animal, the nature of the discharge distinguish this from glanders. The first symptoms, generally, are loss of appetite, slight fever, the head hangs, the cellular tissue and glands of the jaw are swollen, there is a profuse white discharge from the nostrils. Soon the animal begins to recover its appetite, and the disease terminates in about 20 days. Sometimes the discharge from the nostrils forms under the jaw a large tumor, which breaks and discharges much pus. Light diet, gentle exercise, regular grooming, demulcent drinks, such as barley-water or water mixed with honey and powdered marshmallow or licorice, make up the best treatment, and the animal soon recovers vigorous health.

The following is another treatment: Keep the animal in a warm place, and cover it with a cloth. Give no drink cold, but mix it with barley-meal and honey; for food, give clover mixed with barley-meal and moistened with water. Mix equal parts of gentian, juniper berries, galangal and honey into an electuary, and smear a piece the size of a walnut on the tongue night and morning. If the swellings are large, poultice them with bread crumb and milk, open them, and press out the matter.

Other forms of the disease occur less frequently, but must be treated alike.

Tetanus, or Lockjaw, can generally be traced to some injury, as nail-wounds in the foot, injuries to the joints or eyes, docking or castration, though it does not occur in more than 1 per cent of these injuries. Other cases may be traced to cold.

The symptoms once seen can never be mistaken. The rigidity of the muscular system gives the animal a stiff, jointless appearance; the muscles of the limbs stand out in relief, the belly is "tucked up," and the tail elevated. The slightest excitement, as the opening of a door, or approach of an attendant, aggravates this condition. The tail is thrown out horizontally, the head spasmodically raised, and the haw of the eye protruded (a very marked symptom). The mouth, if a finger be quietly inserted, will be found firmly fixed, or just able to open, perhaps ½ inch. There is an almost constant attempt on the part of the animal to open the mouth, which is accompanied by a profuse flow of saliva. The cause of death is exhaustion from the active state of the muscles, and from the inability of the animal to take sufficient food. A fatal termination may be accelerated by the animal falling down; it cannot then rise without help, but lies constantly plunging; congestion of the lung sets in, and death speedily follows.

Treatment: Injuries should be looked for, and, if found, placed in the most favorable position. In the early

stages division of the nerve which leads from the injury often gives immediate relief, but after a time the spinal cord itself becomes so affected that this entirely fails. Wounds should be fomented with warm water. All excitement should be avoided. The stable should be darkened, other horses removed, no visitors allowed, and only one attendant. Never raise the head nor attempt to administer draughts or balls. Give food that requires no mastication, as boiled barley and linseed oatmeal, gruel, milk, etc., but never bran mashes, which are starvation in disguise.

The best medicine is prussic acid, in ½ dram doses, twice daily, combined with perfect quiet. An ordinary india-rubber enema syringe is fastened to about 12 inches of small gutta percha tubing; it is filled so full of water as just to admit the acid, which can then be thrown to the back of the mouth with the smallest amount of water.

A very bad case should have slings placed under it to prevent falling. About three weeks is the duration of a favorable case ending in recovery; it may be protracted to three months. A fatal case terminates in from three to four days to a fortnight. The French recommend opium in large doses (2 drams to 4 drams), fomentation of the injured part, enemas, friction with camphorated oil, nitre in the drink. If the medicines cannot be administered by the mouth they should be injected into the bowels, the dose being increased one-half.

Thrush is inflammation of the lower surface of the sensitive frog, and where there is a large space of the frog raw, the horse should be shod with leather soles to prevent injury from newly-laid granite or flint stones. Dirt is an exciting cause.

First, cleanse the foot thoroughly with warm water, removing loose portions of horn. Then apply some mild astringent and stimulant. If the discharge is dried up suddenly by a strong dressing, a swollen leg is a common sequel. The following is a good application:

Alum and common salt, of each ..... 1 part.
Stockholm tar ..... 4 parts.

In obstinate cases substitute zinc sulphate for the salt.

Tonics—Iron, copper, and zinc are the most reliable mineral tonics. For horses or cattle use the following:

Ferri sulph.....
Gentianae pulv .....
Carui seed .....
Coriander seed.....
Zingiberis pulv.....aa 1 ounce.

Make into balls with treacle, or give in powder with the food. The dose of iron or copper sulphates is 2 drams. In cases of chronic nasal discharge the dose should be doubled, and the copper salt is preferable to the iron.

In broken wind, chronic cough, and non-parasitic skin diseases, arsenic is a valuable tonic.

Arsenic alb ..... 5 grains.
Cantharidis pulv ..... 5 grains.
Ferri sulph. pulv..... 2 drams.

Once a day with food.

For a mild tonic for horse or ox give a mixture of equal parts of common salt and gentian—a tablespoonful twice daily.

A more powerful tonic is:

Cinchona bark..... 4 drams.
Quassia or gentian ..... 2 drams.
Aniseed .. .. 2 drams.

As a powder, or made into a ball with treacle.

Quinine may be given in pills; dose 1 to 8 grains.

Vives, or Strangulous Abscess, are swellings of the parotid glands situated at the top of the jawbone, at the junction of the head and neck. They result from blows or from badly-treated strangles. They should be treated like an ordinary abscess or tumor—with poultices, enemas and light diet. Remove the hair, rub daily with a mixture of 2 parts quicksilver and 3 parts ung. populeum, and cover it with wool. If it softens, it should be opened, and kept open till the daily application of this salve completely heals it. This must be done by an experienced person, as a case of discharge of saliva from the parotid gland or duct is extremely difficult to heal. If clear water flows from the horse's mouth, mix equal parts of tinctures of aloes and cinchona, and fill the wound with tow moistened in this. It should be changed twice daily. The animal must be kept warm and allowed no cold drinks.

Weed, Shot or Grease, Humor, Monday Morning Disease, or Lymphangitis, is almost peculiar to cart-horses, most frequently attacks hard-working animals, and appears after a day or two's rest.

Symptoms: Lameness, with heat, pain, and swelling in the leg—generally a hind one—first appearing high up inside the thigh, rapidly spreading downwards even below the hock. The swelling pits like dough under pressure, the impression remaining for some time. The pain is very acute, slight violence causing the limb to be raised so as nearly to overthrow the animal. Favorable cases recover in a few days under treatment, but severe or improperly treated cases may leave permanent thick-leg or sloughing indolent sores.

Treatment: First give a dose of physic. Foment the swelling with warm water continuously for a long time; to apply it for a few minutes and then allow the limb to cool is worse than useless. Exercise as soon as the animal is able to walk tolerably well. Give diuretics. The food must not be very nutritious; bran is best. If the swelling remains after the acute symptoms have subsided, apply hartshorn and oil as a gentle rubefacient. Should the skin slough and leave sores, dress them with a lotion of zinc sulphate (2 drams with 20 minims of carbolic acid in 1 ounce water). Nearly all cases can be prevented by occasional diuretics, with bran on Sundays and other rest days.

Worms. — Ascarides, or roundworms, are the commonest; tapeworms are exceedingly rare.

Symptoms: The presence of worms in the dung is an unmistakable symptom. Poor condition, with absence of any assignable cause for it, may indicate the presence of worms when they are not found in the dung.

Treatment: To kill the worms give a good dose of aloes on an empty stomach, and follow up with the following tonic, labeled simply "The Powders." Stablemen have an idea that

powders are the only form in which worm medicine can be given.

Canthar. pulv.	1 dram.
Arsenic	1 dram.
Ferri sulph.	12 drams.

Make into 12 powders. Give one daily in the corn.

Wounds generally.—Broken Knees. Sore Backs, Etc.: If a wound will heal by first intention the less done to it the better. Dirt and foreign matter must be removed and the wound cleansed, preferably by wiping with a dry cloth. If suppuration is inevitable the best application is carbolic acid, combined with glycerine and linseed oil (1 in 20), applied night and morning with a feather. In Germany slight wounds would be washed with camphorated spirit or Goulard's water, and covered with bibulous paper soaked in the same liquid, or anointed with the drying ointment mentioned under bruises.

CATTLE.

Balls pass directly into the first stomach, and there remain undigested and unabsorbed. As the mildest illness is generally accompanied by suspended rumination balls are therefore almost useless.

Draughts are the most convenient form of medicine. They should be abundant in quantity. Twelve ounces of Epsom salts in 4 quarts of water are more efficacious than 16 ounces in 2 quarts.

Cold—The animal eats little, and the ears and legs are cold. From old animals let 1 quart of blood from the jugular vein, from young ones 1 pint; to calves give daily ¼ ounce of saltpetre dissolved in water. If the animal is benumbed, standing with its legs close together, boil four handfuls of arnica herb in beer for a quarter of an hour, strain, give half of it with ½ dram of camphor in powder; cover the animal warmly for three hours, then rub down the whole body with a wisp of straw. Next day give the other half as before, and repeat the treatment on the third day. If the stiffness persists, place an issue in the breast. If purging ensues discontinue the drink and give ½ ounce of nitre dissolved in water. A little meal and honey may be mixed with the drink.

Cough results from cold or from dusty hay. Good, clean food must be chosen and sprinkled with salt water. Make an electuary of black antimony, 2 ounces; elecampane, 3 ounces; fennel seed, 2 ounces; a little oil of juniper and enough honey. Rub a piece the size of a hen's egg on the tongue morning and evening. When cold is the cause dissolve 1 part of elderberry jam and 2 parts of honey in 18 parts of water, and give 1 pint of this night and morning.

Cowpox . (Variola Vaccina).—An eruption on the udder. There is fever, trembling, loss of appetite, rough hair, little milk, kidneys and bowels irregular. When the eruption appears the fever goes, the milk is less in quantity, watery, with little lumps in it, and curdles easily. The udder soon swells, is tender, reddens, spots like flea-bites appear, with greyish-yellow pustules which indicate the receptacles of the lymph. The pustule is ripe on the ninth day, when it dries and falls

away. It is, therefore, not advisable to do anything.

Diarrhoea (Scouring) results from cold or from decomposed food such as is found on sour, marshy soils. Sound, dry food is the best cure. Mix 2½ ounces tormentilla root, 4 ounces chalk, and 2½ ounces juniper berries, and give ½ ounce in water thrice daily.

Eye Disease.—If the eye runs and is swollen and closed take 2 pounds of blood from the jugular vein on the affected side. Mix white lead ointment and camphor, and make a streak the thickness of a straw daily on the upper eyelid. Lesser complaints may be cured by fomenting the eye with cold water, and keeping the animal in the stall. If they are caused by blows bleeding is unnecessary, the application of the ointment suffices. If the cause is a particle of the food raise the lid, remove the source of irritation, and wash the eye with fresh water. See also Ophthalmia, under "Horses."

Fardel-bound, or Impaction of the Third Stomach in Cattle and Sheep.—The most characteristic symptoms are the grunt at each expiration, accompanied by most obstinate constipation. There is no pain on pressure of the ribs as in pleuro-pneumonia. Give an aperient of Epsom salts or calomel, with aromatics and diluents.

Foot Disease.—The horn becomes mattery in the middle of the slit. Sand or dust gets in and the animal goes lame. Examine the foot and cleanse it carefully. Take ½ ounce of green triol, ½ ounce of alum, powder and dissolve in water; wash the place with this, lay tow on it, and bind it up. Cut away the horn where it is diseased and mattery. Mix two parts of loam and 1 part of cow-dung, make it into a paste with vinegar, spread it all over the foot finger thick, bind it up, moisten it often with vinegar, and leave it for 24 hours. Repeat the treatment from the washing onwards till the hoof is well. If the hoof separates from the coronet, cut it away to prevent an accumulation of grit and other matter, and treat as above. If water is near, drive the animal into it several times daily and let it stand therein; this makes the binding-up superfluous. Good dry straw and standing for a time in water are the best remedies for this disease.

Foot-and-mouth Disease, vide Contagious Diseases (Animals) Acts, 1878, under Farcy ("Horses").—It is a contagious eruptive fever, rarely attacking the same animal the second time, sometimes affecting man.

Symptoms: At first loss of appetite and feverishness; if at grass separate from the rest of the herd. There is an eruption of little bladders or vesicles on the lining membrane of the mouth, on the udder, and between the digits. The eruption on the mouth, produces a profuse discharge of frothy saliva, and interferes with or sometimes arrests mastication. Should the eruption spread backward to the pharynx and gullet swallowing is interfered with. The eruption on the udder, if mild,, merely renders milking difficult and painful, but it may be so severe as to cause inflammation of the gland. The eruption between the digits is the most dangerous symptom. The vesicles may be followed by pustules, then by suppuration round the coronet, even to the extent of detaching the hoof. The pain aggravates the

fever, and sometimes leads to death. This virulent form is now uncommon.

Treatment: (a) General, for the fever. Give for an adult—

Magnes. sulph. .....16 ounces.
Sulph. subl. ..... 2 ounces.
Zingib. pulv. ..... 1 ounce.
in about 4 quarts of thin gruel.

(b) Local: Wash the mouth with a simple solution of alum. Wash the feet clean and dress with a weak solution of zinc sulphate. Milk very gently, and if this causes much pain, insert teat syphons. Hard food, such as turnips, may be boiled; bran mashes and the like may be given while the mouth is sore. After the removal of the local symptoms give as a tonic 2 drams each of gentian and iron sulphate in 1 pint of linseed tea once a day.

Hoven.—When too much green food is eaten it ferments and causes distension of the first stomach. Mix 3 teaspoonfuls of petroleum with ½ pound of brandy, or ½ ounce of salammoniac with 2 pints of water; with this cleanse the excrement from the rectum, and give every half-hour an enema made by boiling in 4 pints of water 3 handfuls each of camomiles and mallow leaves; add two handfuls of salt and 1½ ounces of linseed oil, and inject a pint luke-warm. If this gives no relief the trocar must be used. The needle and tube should be inserted in the left flank a hand's-breadth below the hip, behind the stomach, just deep enough for the ring of the tube to rest on the skin. The needle must then be drawn out. If the tube gets stopped it must be cleansed with a twig. It must be left in place some hours, or as long as more gas is formed in the stomach. If the animal is uneasy under the pricking, raise one of the fore feet to make it stand still. If it wants to lie down tie the hind legs together. The wound must be washed often.

Inflammation of the Brain.—The eyes are bright and staring, tongue slimy, mouth hot, pulse quick and strong, ears and horns, hot, appetite none, the patient stares fixedly before it, is convulsed, wild, and delirious. Generally the heat of the sun is the cause. Let 3 pounds of blood from the jugular vein promptly. Dissolve 2 pounds of nitre in water and give every four hours. Place an issue in the breast. Make an enema of camomile flowers and mallow leaves, of each 3 handfuls boiled in 4 quarts of water, strain, add 2 handfuls of salt, and inject a quart of this with 1½ ounces of linseed oil every six hours. Wrap the head in linen, and keep it moist, with cold water. If there is no improvement in two days let another quart of blood, and repeat this next day if needful. Bind the animal, or it will not stand for the administration of the clyster.

Inflammation of the Kidneys.—Symptoms: Loss of appetite, quick full pulse, very scanty urine, back bent, hind legs brought forward under the belly, pain in the neighborhood of the kidneys, suppression of milk. Let a quart of blood from the jugular vein; give every six hours ¾ ounce of nitre dissolved in water; administer twice daily the clyster recommended for red water. On the back, where the kidneys are situated, place folded cloths and keep them wet with cold water.

Inflammation of the Udder, Mammitis, or Garget, may result from external injury, exposure to cold, or irregular and bad milking. It is usually con-

fined to one of the four lobes of the udder. Symptoms: The milk decreases in quantity, becomes watery and curdy, then yellowish from the presence of pus, and may be arrested. The gland swells, feels hard and hot, is very painful, the veins running from it being much distended. There is also general fever. The case generally ends well, but may result in abscess or mortification of a quarter of the udder.

Treatment: Lessen the food and give potassium bicarbonate in 2-dram doses twice daily till the acute symptoms have passed. Apply warm fomentations to the udder, and support it by a carefully-arranged bandage, through which the teats must be allowed to protrude. Draw off the milk frequently, but quietly. After the acute pain has passed use first gentle friction and later a stimulating liniment or a mild iodine ointment. As soon as pus is present make an incision without waiting for it to point. Germans advise rubbing the udder daily with a mixture of oil of bays and marshmallow ointment. If the teats swell rub them twice daily and milk dry. If wounds or cracks appear anoint them daily, after milking, with white-lead ointment. If scurf appears apply a lotion twice daily of Goulard's water, and milk dry, even if this causes pain.

Jaundice (the Yellows):—The symptoms are loss of appetite, cessation of rumination, yellowness of the mucous membrane of the mouth and nose and the whites of the eyes, of the urine and excrement. Feed the patient with boiled potatoes, bruised cabbage, turnips, clover, crushed or ground barley, and give every third morning, fasting, ½ ounce of aloes, 2 drams jalap, 2 ounces Glauber's salt with 1 quart of water. Great thirst, heat, dryness of the mouth, and rapid pulse indicate inflammation of the liver. Take 1 quart of blood from the jugular vein and insert an issue in the breast. Give an enema twice a day, and every six hours 1 ounce of Glauber's salt, ½ ounce of nitre, and 1 dram of powdered rhubarb in 1 quart of water. If the appetite returns give daily only one clyster and two doses of the drink.

Lice.—If these appear great care is necessary. Mercurial ointment, 2 ounces should be mixed with oil of turpentine 1 ounce, and rubbed in twice daily. Every other day the ointment should be washed off with warm water.

Milk—Blue.—This is indicated by blue spots in the cream. Give a dessertspoonful of powdered caraway in water daily till the blueness disappears. The milk-pails must be kept very clean and bright or a fungus will appear on them.

Milk — Bloody. — Bloody milk is caused either by congestion or by injury to the blood vessels of the teats through stretching them too much while milking. In the first case let 2 pounds of blood. The latter is often troublesome. Avoid dragging, but draw the milk by pressure. Keep only the milk from the sound teats, and let the milk from the others fall to the ground. Blood-letting is useful here also. If the teats swell milk them dry, even if matter should come with the milk.

Milk Fever, Dropping after Calving, or Parturient Apoplexy is commonest

among the best-conditioned animals and the heaviest milkers, occurring generally three days, or more or less, after calving. It is not contagious, but once attacked a cow is liable to it at each calving.

Symptoms: The premonitory symptoms are few, and may be overlooked. Any unusual change after calving is suspicious none more so than suppression of milk. With this there is arrested rumination and appetite, a glassy staring; hot horns and ears and cold extremities. The animal often shakes its head, and if made to walk does so unwillingly, pulse full and strong, bowels constipated. Second stage: Eye insensible to light, the animal falls, and either lies in a dull, sleepy way with the head thrown on the shoulder, or keeps wildly dashing it from side to side; pulse quicker and weaker; breathing slow, heavy, stertorous. As the insensibility increases we have paralysis of the muscles used in swallowing, with hoven, or distension of the large stomach by gas.

Treatment: Before the animal falls it may be bled. Apply cold water or ice to the head and neck; wrap the body and legs in rugs; draw the udder gently every four hours, and gently hand-rub it to facilitate return of its proper blood supply. To relieve the constipation give 16 ounces Epsom salts and 2 ounces each of sulphur, aloes, and ginger in at least 4 quarts of thin gruel. Should this not act within six or eight hours repeat half the dose or give 1½ pint of linseed oil with 30 or 40 drops of croton oil. Give 2-dram doses of ammonium carbonate every three or four hours. Inject warm water into the rectum, and if the bladder is not naturally emptied a catheter should be passed once a day. Medicines should be administered through a tube or probang passed into the gullet, as the muscles of deglutition are more or less paralyzed. The animal should be placed in a loose box, and if very violent the head should be fixed. Occasionally the position of the animal should be changed to avoid congestion of the lungs, but it must never be turned on its back at the risk of instantaneous suffocation. Double up the legs before turning it over. The insensibility, or the prior wild, stupid expression distinguishes milk fever from paralysis or severe cold. It can nearly always be prevented by lessening the food a week before calving, and giving an aperient a day after.

The Germans recommend taking 1 quart of blood from the jugular vein, placing an issue in the breast for 14 days, and giving daily 6 ounces of cream of tartar dissolved in water. If the symptoms look dangerous give daily in addition to the above, ¾ ounce of nitre and as much cream of tartar mixed with a spoonful of honey; thrice daily administer enemas of soap and water and vinegar, and sprinkle the animal afterwards with cold water. If in 24 hours the pulse is not improved repeat the bleeding and the enema; otherwise give only a drink and an enema.

Over-eating.—The animal lies on the ground, breathes deeply, groans, and does not ruminate. Give a dose of purging medicine and chilled water; let the animal have walking exercise.

Pleuro-pneumonia, Epizootic, or Contagious Lung Disease.—The period of incubation is generally two or three weeks, sometimes extending to eight or nine. The fatality is about 12 per cent in cases properly treated. Vide Con-

tagious Diseases (Animals) Acts, 1878, as under Farcy ("Horses"). This disease is highly contagious and infectious, and cannot be treated without special consent of the Privy Council, and, as in glanders and farcy, all animals must be slaughtered when affected.

Symptoms: If the animals are out at grass the sick ones separate themselves from the others. In the stall, dullness and loss of appetite are first noticed; next comes increased rapidity of the pulse and breathing; later there is a painful grunt at each expiration; pain is evinced on pressing the spaces between the ribs or on pulling the dewlap. The animal is almost always lying on the side of the diseased lung, to give freer play to the healthy one, or on its breast when both lungs are affected. In Fardel-bound, or impaction of the third stomach, there is a grunt, but it is accompanied by most obstinate constipation, and there is no pain on pressure of the ribs. Ordinary or non-contagious pleuro-pneumonia cannot be certainly distinguished from the more dangerous disease, so that the strictest precautions should always be used.

Quinsey.—Dullness, loss of appetite, difficult breathing, rattling in the throat, dry, hot mouth, painful swellings under the throat, inability to swallow, the water returning by the nose, pulse rapid, are among the symptoms.

Take 2 pounds of blood from the jugular vein. Mix

Marshmallow powder .....3 ounces.
Glauber salt .....5 ounces.
Nitre .....4 ounces.
Cream of tartar.....4 ounces.

Rubbed with 1 pound of juniper berries. Every four hours put a spoonful of this on the tongue, and hold the head up till the animal has swallowed.

Mix

Turpentine oil..... 1½ ounces.
Oil of bays..... 1½ ounces.
Camphor spirit ..... 1 ounce.

and rub the swelling therewith thrice daily. Should the rattling in the throat increase, repeat the bleeding on the third day, and try the effect of barley meal mixed with the drink. Should the glands and windpipe swell so that the breathing is obstructed, dissolve ¼ ounce of camphor in 2 ounces linseed oil, mix with it 2 ounces liquid ammonia, and rub the windpipe therewith daily.

Red-water.—The coloring matter of the blood passes through the kidneys with the ordinary watery matters. There is a steady and rapid falling-off in condition. There are no blood clots in the urine, as in cases of haematuria, but the color of the secretion varies from pale sherry to nearly black. Other symptoms are: Suppression of milk, cold ears, anxious look, loss of appetite, steady increase in the rapidity and volume of the pulse, and the characteristic urine. If aid be not soon forthcoming, the disease is fatal.

Treatment: Never give diuretics or astringents nor apply stimulants to the loins. Give first:

Epsom salts ..... 1 pound.
Powdered aloes ..... 1 ounce.
Ginger ..... 1 ounce.

in not less than 3 quarts of oatmeal gruel.

Then give once or twice a day in linseed tea ½ ounce eacn of ether, tincture of gentian, and tincture of ginger. After the disappearance of the symptoms, continue to give a tonic. Fresh

air, even temperature, and frequent changes of food should be attended to. In loss of appetite give linseed and oatmeal as gruel.

The German directions are to let promptly 1 quart of blood from the jugular vein. Give 1 ounce of nitre dissolved in water morning and evening until cured. Feed with fresh green food, and administer daily 1 pint of the following enema: Boil three handfuls of groats in 2 quarts of water. To each pint add on administration ¼ ounce nitre and 1½ ounces linseed oil.

Ringworm shows itself as one or more circular spots, almost denuded of hair, and varying in size up to that of a crown piece. Unguentum hydrargyri biniodidi rubbed into and around the spot is a specific. One application is generally enough.

A successful application is a solution of carbolic acid in 18 times its bulk of a mixture of equal parts of spirit, glycerine, and water. Apply it daily for three days with a small brush.

Rheumatism should be treated by rubbing on the painful joints once a day a dram of the following liniment:

Tincture of aconite (Fleming) . 1 part.
Chloroform ..... 1 part.
Spirit of wine..... 3 parts.

Scab generally comes from bad or insufficient feeding. Give better nourishment. Mix 2 ounces of antimony, 4 ounces gentian, 8 ounces juniper berries, 2 pounds of salt; give daily a spoonful. Dissolve 1½ ounces in a gill of water and wash the affected parts. If no progress is made insert an issue in each haunch for 14 days. Keep the animal from the others.

Calves should be treated as follows: Mix 1½ ounce nitre with 1 ounce flowers of sulphur; give the animal 1½ ounces, and make an ointment of the rest, which should be rubbed into the affected place, and washed off on the third day with soap and water. If bad food is the cause, mix ½ ounce gentian, ½ ounce juniper berries, 3¼ ounces flowers of sulphur, and as much liver of antimony, powder and mix, and give ½ ounce daily. As food give crushed barley.

Stoppages, or Constipation.—The animal loses appetite, stamps with the hind legs, lies down and rises uneasily, groans heavily, at the same time heaving up the body. Anoint the hand with oil, insert it carefully in the rectum and remove the excrement accumulated. Make an enema by boiling three handfuls each of camomiles and mallow leaves in 4 quarts of water, adding two handfuls of salt. Administer 1 quart with 1½ ounces of linseed oil, rather more than lukewarm, and repeat this every half-hour until the disease is relieved. If there is no relief take 1 pint of the decoction, ¼ pound of linseed oil, ½ ounce of potassium sulphate. Administer this every half-hour. If the disease persists more than half an hour let 2 pounds of blood from the jugular vein. A quarter of an ounce of asafoetida may be rubbed up with boiling water, and administered as a drench.

Suppression of milk often accompanies indigestion. Three mornings running give fasting 4 ounces Glauber's salt dissolved in water. Mix 8 ounces powdered gentian and 6 ounces powdered caraway; divide into 24 doses, and give one night and morning in a little water.

Tail-worm.—If the tail remains too long in excrement, gangrene sets in, which eats down to the bone, and the tail falls off. When this is discovered the hair should be cut off, the place cleansed and strewed with blue vitriol. If the hair is already gone, touch with a hot iron and wash with salt water.

Tapeworm.—The animal falls away in condition, the hair is rough and bristly, the head is turned often to look at the body, the animal strikes its body with the hind legs, and lashes its tail. Take valerian root, fern root, worm seed, garlic, of each 2 ounces, powder and give daily for 12 days ¾ ounce to an ox, ½ ounce to a cow, and ¼ ounce to a calf.

Thrush in Calves shows itself in whitish sores on the tongue or gums of sucking calves, and the patient refuses to suckle. Take ½ pint of vinegar, a spoonful of honey, and a little alum; mix them together, and wash out the mouth with this thrice daily. If this fails, take ½ dram of rhubarb, 1 dram of magnesia; give this in water twice daily, and continue the mouth wash.

Tonic.—During convalescence from pleuro-pneumonia, or during the later stages of red-water, use

Ether sulph. ..... 2 ounces.
Tr. zingib. ..... 2 ounces.
Tr. gentianae ..... 2 ounces.

Give a fourth part every six hours in a pint of gruel.

White Scour is diarrhoea in calves brought up by hand on milk. It is caused by feeding them too seldom, and then giving too much milk at once; the result is that the stomach after curdling the milk is unable to digest the curds, which set up diarrhoea. A little chalk mixture may be given at first, but the cause should be removed by giving the food at regular and short intervals.

The Germans recommend for animals under 14 days old 1 dram of rhubarb and 1 dram of magnesia twice daily in water. Older calves may have twice as much. It is well to mix some wheat meal with the milk.

SHEEP.

Sheep may be treated like cattle, reducing the dose to one-fourth.

Red eyelids are always a sign of health; when they are white or blackish the animal is ill.

Consumption.—It may result from rot or from bad food or water. The symptoms resemble those of rot—cough, falling of the wool, and paleness, swelling of the eyes, etc. Mix juniper berries, roasted acorns, and gentian, of each ½ ounce, add ¼ ounce common salt, and give an eighth part till the animal recovers.

Cough results from cold. Mix fennel-flowers, elecampane root, flowers of sulphur, of each 2 ounces, and give two spoonfuls several times a day. If the cough results from dusty food, see that the cause is removed.

Diarrhoea lasts at most only three days. Mix ½ ounce juniper berries and as much chalk, and give a teaspoonful several times a day. If blood is present in the excreta give often 1 dram each of rhubarb and magnesia and ½ ounce of honey. For sucking lambs put a piece of chalk in the stall for them to lick, and give in ewe's milk 1 dram of magnesia twice daily. For bad cases boil 1 ounce gentian root in 1

pint of water, strain, and dissolve in the decoction 1 dram of opium. Give a teaspoonful every two hours. Calamus root does good service.

Treatment: Mix barley meal and water, add ½ ounce of nitre to each quart, and for three days give the sheep as much of this to drink as they will take. Boil quicksilver in water and give a full pint morning and evening. At midday give ¼ ounce of soot mixed with honey. Take powdered oyster shell, ½ ounce, camphor, 20 grains, make into a paste with almonds, and give ½ dram every two hours during the first three days. Then mix conium extract, ½ ounce; castile soap, ½ ounce; squills, 2 drams. Make into a paste with water, and give 12 grains twice or thrice daily. Give every other morning, fasting, ¼ ounce, hepatic aloes for a week. Then mix milfoil, blessed thistle, wormwood, gentian root, juniper berries, bayberries, lesser centaury, iron filings, of each, 2 ounces. Give morning and evening, an hour before food, three spoonfuls of this with two spoonfuls of common salt, a handful of oats made into an electuary with honey. Continue this till the animal recovers.

Foot-rot is a very common disease amongst sheep, especially on some soils, as it is never absent from some flocks in the wet seasons. The symptoms are lameness and local inflammation; the hoof separates from the coronet, and large ulcerating sores appear; when very frequently much harm is done by the unsparing use of the shepherd's knife. Moisten loam with vinegar, put it in a bag, stick the foot into the mass and tie it up. Repeat this several times daily, cleaning out the matter from the edge of the cleft in the hoof and cutting away all diseased horn. Make a solution of alum ½ ounce, green vitriol, ½ ounce, in ½ pint of water; dip tow in this and place it in the wound, and cover it with dry tow.

Giddiness is said to be caused generally by worms in the brain; it is rarely curable, and as the flesh is harmless it is best to kill the animal at once. Diaphoretics may be tried, as juniper berries, 4 ounces; castile soap, ½ ounce; squill, ¼ ounce; give ¼ ounce thrice daily. If the disease is caused by the presence of worms, snuff may be blown through a tube as far up the nostrils as possible.

Hog Pock.—Symptoms: Head and face swollen, abscesses form round the nostrils, also in the legs and joints and other parts of the body. It is contagious and very troublesome to deal with. Push up the nostrils a twig covered with wool until the animal sneezes, or blow snuff up them. Take caraway 1 ounce, camphor 1 dram, olive oil ½ ounce, rub together in a mortar, and anoint the nostrils therewith. Mix elecampane, pimpinella root, hyssop, and elder, of each 1 pound, add salt, and give 1½ ounces thrice daily.

Hoven, or Tympanitis, is generation of gas in the stomach, caused through over-feeding early in the morning, when the dew is on the clover.

The safest treatment is to puncture the reumen and give a strong dose of purging medicine, with brisk exercise and change of food. The animal is completely prostrated, and needs speedy help. Give at once ¼ ounce petroleum mixed with 1 ounce brandy. If there is no relief in two hours the trocar must be used.

Inflammation of the Brain.—Great heat is commonly the cause. The head hangs, skull and ears are hot, eyes are closed and watering, mouth dry, tongue white and slimy, body trembling or shivering. Let blood immediately. Dissolve 1 dram of nitre in water, and give this thrice daily. Put cloths on the head and keep them wet with cold water until the animal recovers.

Jaundice is caused by a diseased condition of the liver, and is sometimes the sequel or associate of other diseases. Treatment: Aperients, combined with vegetable and mineral tonics. Give pure water, and change the diet occasionally.

Lice.—Mercury, 1 pound; Venice turpentine, ½ pound; turpentine oil, ¼ ounce; rock salt, 1 ounce; rub in a mortar till the mercury is extinguished and no lumps are visible. Part the wool on the back, sides and legs, and rub the salve in; the lice will die.

Milk Fever.—See under Cattle.

Red-water. — Powdered caraway mixed with salt must be put where the animal can lick it. The seeds of the oxtongue are useful.

"Rot" is a disease of the liver, very fatal; in some seasons actually decimating whole flocks. It is caused by a parasite called "liver-fluke," distoma hepaticum, which infects in large numbers the biliary ducts of the liver. This disease wastes the system, the animal becomes pot-bellied, the abdomen dropsical, the wool easily separated from the skin, the mucous membranes colorless. The eyeballs have a peculiar appearance not easily described, but well understood by sheep dealers and farmers. The animals become emaciated and weak in the latter stages, and death soon follows. Mr. A. P. Thomas, of the University Museum, Oxford, has just suceeeded in proving that the intermediate host of the liver-fluke (the cause of sheep-rot), is a small water snail, limnaeus truncatulus. The snail, although a water snail, lives much out of water. It may be left in immense quantities on lands by floods; and, according to Mr. Thomas observations, will continue to live there as long as the ground is moist. The parasitic larva escapes from the snail and has a tendency to encyst itself on surrounding objects, such as the roots of grass, whence it is apparently taken up by the sheep, probably in the encysted condition, to be ultimately developed into the adult form in the liver. The epidemic was previously known to be manifested amongst sheep allowed to feed on wet pastures, and particularly on flooded ground.

Scab is due to the presence of parasitic insects, called acari. Scab is on the list of the contagious diseases.

Symptoms: Minute red spots first appear when the insects burrow into the skin. These develop into little pimples, and then into pustules, which burst about 16 days after the first appearance of the red spots, when the brood of young is ready to emerge. Intolerable itching accompanies all this, and the rubbing and scratching aggravate the pustules, destroy the wool, and make sores, while the wool left on the hurdles and trees may weeks later carry the disease to healthy animals which touch it. The

insect may be discovered by gently scraping a little scurf from the affected spot, and examining it under the microscope with a ½-inch objective.

Treatment is directed to destroying the acari on the surface of the skin, with subsequent applications for the benefit of those which escaped the first, removal of all sources of contagion. Mercurial and arsenical preparations are poisonous, and are not more efficacious than non-poisonous dips. Sulphur ointment is a good application. The following dip will not disappoint:

Size	Of each
Sulphur	1 pound.
Tobacco	
Water	5 gallons.

Infuse the tobacco in the cold water, add the size and the sulphur, stir frequently during application, and repeat at least once in about 16 days. The size makes the dip slightly sticky, and makes the fleece retain the sulphur better.

Small-pox, or Sheep-pox, is frequently met with on the Continent, but has been rarely discovered in Great Britain. It is one of the diseases included in the contagious diseases. The symptoms are heaviness, loss of appetite, arrest of rumination, dull weeping swollen eyes, and the formation of blisters on part of the foot. The sick sheep should be separated from the sound. Give morning and evening a ¼ pound bruised bayberries, and as much clover when the disease first appears. Wash the eyes carefully with milk.

Swollen Udder, or Garget.—Rub together the white of an egg, some saffron, and olive oil, and rub the udder with this thrice daily. Milk the animal so long as the disease lasts, and give internally twice daily, to remove the hardened milk, 1 dram of a mixture of potassium sulphate 4 parts and nitre 1 part. Give once 1 dram of nitre and 2 drams of common salt dissolved in water.

Wens, or Tumors, often occur in wet years and accompany rot, and must be treated like that disease. The wen should be opened and emptied of its fluid contents.

Wild-fire, or Sore Lips, is more common amongst lambs than adults; it is caused through an impure condition of the blood. Sometimes it is produced by eating large quantities of vetches, or feeding off pasture mixed largely with poisonous weeds and thistles. Pimples or blisters appear on the mouth and lips, etc. Bruise together in equal parts hyssop and salt, and rub therewith the affected places.

Worms and Obstructions of the Bowels.—When troubled with worms the animal feeds greedily but does not thrive, rubs its nose in the earth, is soon very thirsty; at times the belly is puffed. Cold ears, scraping with the foot, great uneasiness, sweating in all parts of the body, wallowing and springing up again, with gathering up the limbs, are symptoms common to worms and obstructions. A speedy cure is ½ ounce of glanzruss,* ½ ounce wormwood, ½ ounce broken egg-shells, mixed and given in one dose; ¼ ounce of theriaca does good service. Administer enemas of wormseed mixed with sweet milk, though quicksilver boiled in milk answers better. When improvement is visible give ½ ounce hepatic aloes or 2 ounces

Glauber's salt as a purgative. Lye of wood ashes is good against worms.

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*Glanzruss is a kind of reddish pitch obtained during the burning of charcoal.

GOATS.

Constipation, Colic, are caused by lumpy food of bran or groats. Symptoms: Loss of appetite, cold ears, uneasily rising and lying down, anxious glances at the flanks, and sweating on the throat, flanks, and on the hind legs. Give every three hours 1 ounce Glauber's salt in water, and every half hour ½ ounce linseed oil till the colic is relieved. If the disease results from cold, boil 3 handfuls of camomiles in 1 quart of water, let it clear and cool, and give ½ pint every half hour. Two drams of asafoetida may be dissolved in this or given in an enema, when it must be mixed with a little linseed oil. Colic also results from eating too much clover. In that case add 1 ounce Glauber's salt to the camomile decoction; give it every half hour by the mouth, and every half hour as an enema.

Cough—Take valerian root and arnica herb, each 1½ ounces, liver of antimony ½ ounce, and 2 ounces grated horseradish, make into an electuary with elder rob or honey, and rub ½ ounce twice daily on the tongue.

Dropsy generally results from pasturing on marshy soil, but sometimes from internal causes. The swollen belly and the emaciated body are symptoms; swellings frequently accompany these. Take water fennel seed (sem. phellandrii), gentian root, and juniper berries, of each 1½ ounces; make into an electuary with honey, add ½ ounce Venice turpentine, and give twice daily ½ ounce rubbed on the tongue.

Exhaustion.—There is little appetite, and the best food never fattens. Take angelica root, gentian, and valerian, of each 2 ounces, powder it, make it into an electuary with honey, and give ½ ounce twice daily.

Eye Diseases often result from bad food or from too much corn as food. The eye swells and is kept closed without external hurt. First seek the cause and remove it; give the animal morning and evening 1½ ounces of Glauber's salt dissolved in water, till purging ensues. Cool the eye often with water, or anoint it with camphor and white-lead ointment. Continue for eight days if the inflammation is not reduced. If the hurt is external, use only the external applications.

Giddiness occurs more commonly among male goats. Ears and horns are hot, eyes shining and watery, head hanging; there are loss of appetite, and senseless turnings-round. Let ½ pound of blood, and give every two hours ¼ ounce nitre dissolved in water. Wrap the head in linen cloths and drench it often with cold water, and give an enema every hour as in inflammation.

Internal Inflammation results generally through chill. The symptoms are loss of appetite, ears alternately hot and cold, breathing difficult, heaving sides, strong, rapid pulse, to be observed by placing the hand on the left side behind the shoulder-blade or

the ribs. Let ½ pound of blood; take 3 ounces Glauber's salt, 2 ounces cream of tartar, 1 ounce nitre, powder it, make into an electuary with honey, and give some of it every two hours. Boil two handfuls of camomiles in 4 pints of water, mix in ½ ounce linseed oil, and give an enema of this thrice daily. In inflammation of the lungs the animal does not lie down, but the treatment is the same.

Red-water effects goats kept on marshy pasture and fed on marsh grasses. If the urine is red, let ½ pound of blood from the jugular vein, take 1 dram of nitre, dissolve in water, and give to the animal twice daily.

Scab or Itch.—Is caused by uncleanliness, bad or decomposed food, or by contagion. Small sores, becoming covered with scabs, at last overrun the whole skin. They also appear as dry scabs when the hair falls off. The latter is "dry," the former is "moist," scab. The animal must be separated from his fellows; search for the cause and remove it. Take gentian and juniper berries, of each 1½ ounces, and sulphur 1 ounce; make it into an electuary with honey, and give twice daily, ¼ ounce, or rather more, to strong animals. Now give good nourishing food of crushed potatoes and carrots with barley, groats or meal, wheat or rye bran, with a handful of oats, care being taken to break up all lumps, which might otherwise cause fatal obstructions. After about five days take beef tallow, 3 ounces, melt and stir in 1½ ounces turpentine oil. Rub the affected places with this. In winter use hogs' lard instead of beef tallow. After a few days wash the ointment off with warm water and soft soap; repeat the anointing and washing till cured, continuing the nutritious food.

DOGS.

Medicines for dogs may be either pills or draughts. Sugar-coated pills are now used by some veterinarians. To administer them, open the dog's mouth, place the pill as far back as possible, shut the mouth, and rub or tap the place where the under-jaw meets the throat. The pill will be swallowed without difficulty. If the dog returns it after swallowing, give it again, and follow it by a piece of meat. The mouth may be safely opened by taking care to fold the upper lip over the teeth. Nearly tasteless substances should be sprinkled on the food when the appetite is good.

Chorea—St. Vitus Dance.—Involuntary movements of the muscles, best seen when the animal is quiet, sometimes affecting the whole body; at others implicating merely a group of muscles, as of the face, neck, or a limb. It may be caused by irritation from worms, or diseased teeth, or, it is said, by injury to the head, but most commonly it is a sequel to debilitating disease, especially distemper. Ether, ammonia, valerian, asafoetida, quinine, strychnine, iron, copper, zinc, silver, and arsenic have all been strongly recommended. The following have sometimes been successful:

Liq. arsenicalis	1 dram.
Tr. ferri perchlor.....	2 drams.
Inf. gent.	13 drams.

A teaspoonful twice daily.

Zinci sulph. seu. valerianat. 6 grains.
Quiniae ..... 1 scruple.
Conf. rosae, enough to make 12 pills.

Two every day.

Distemper is contagious, affecting principally young dogs, and rarely occurring twice in the same animal; very many escape it altogether. It is a simple fever with local complications affecting the nose and throat, and, in bad cases, the lungs also. The stomach, kidneys, intestines, and even the brain are disordered as in other fevers. Its closest analogue in human diseases is influenza.

Symptoms: In ordinary cases the symptoms are dullness, sneezing, dryness of nose, loss of appetite, disordered stomach, with watery discharge from the eyes and nose. As the disease advances the discharge becomes purulent, the sneezes becomes a cough, sometimes of a peculiar choky kind, as if some foreign body were in the throat. From the first there is a marked debility, which rapidly increases. Frequently there are complications, such as inflammation of the lungs, violent diarrhoea, disordered liver causing jaundice and various nervous affections, paralysis or convulsions; these must be treated apart.

Treatment should be chiefly good nursing. Keep the patient in a well-ventilated dry room at an even temperature (not warm). Allow fresh air, clean water, and easily digested food, but no exercise till strength returns. Sponge the nose and eyes frequently, and force down soups or broth if food is refused.

Give at first 2 to 4 grains of tartar emetic in butter or on a small piece of meat. Keep the bowels regular by mild aperients, as a mixture of equal parts of castor oil and syrup of buckthorn; dose, 2 drams to 8 drams.

When the acute symptoms have subsided give stimulants and tonics:

Quinine ..... 20 grains.
Ginger ..... 60 grains.
Iron sulphate ..... 60 grains.
Extr. gentian, enough to
make ..... 12 pills.

Give two or three every day.

Quinine ..... 120 grains.
Ammon. carb. ..... 120 grains.
Extract gentian, enough to
make ..... 12 pills.

Give two or three every day.

For debility, with diarrhoea, give—

Ferri carbonatis ..... 1 dram.
Catechu pulvis ..... 2 drams.
Opii pulvis ..... 10 grains.
Cretae prep. ..... 2 drams.

Make 12 pills with confection of roses. Two or three every day.

Fits or Convulsions are commonest in young dogs, and may often be traced to changes in the teeth, the presence of intestinal worms or distemper. While the fit is on keep the animal in a quiet place, and prevent injury to it. Only when the fits are violent and frequent may a warm bath be tried, as it is difficult to dry the animal without exciting it. After the fits are well over search for loose teeth or worms, and remove them. After removing the

cause, give the following tonic to prevent the return of the fits:

Arsenic	1 grain.
Iron sulphate	20 grains.
Extr. gentian, enough to make	15 pills.

One to be given daily. Order exercise, good food, and a dry house.

Fractures are called "simple" when the bone is only snapped in two, "comminuted" when it is splintered, and "compound" if the skin is wounded. The bones most frequently broken are the long bones of the limbs. Fractures of ribs or skull are dangerous from the chance of injury to organs within, and should be only treated by an expert.

Where the bone is well covered with flesh, detection of fractures requires care. Besides pain and lameness, the symptoms are sometimes swelling and displacement, twitching of the muscles, and crepitus, or grating, heard on moving the bone so as to bring the broken ends into contact. The twitching of the muscles is due to irritation caused by the broken ends. Ordinary extension will reduce a fracture to its proper position, while considerable force is required to reduce a dislocation, and when reduced it remains fixed.

Treatment: Special care must be taken to replace the fractured ends in their natural position, as it will be repaired by natural processes in any position in which it is fixed. Next, the limb must be kept fixed in this position. We may use either splints of thin wood, cardboard, or guttapercha, or a long bandage saturated with glue or starch to give it requisite firmness. The starched bandage is a useful form. First roll a dry bandage carefully round the limb, beginning at toes, no matter where the fracture is, and applying it as high on the limb as possible. The joint above and below a fracture should always be fixed, if possible, as this reduces movement to a minimum. If the bandage is not applied first at the toes, the compression above is sure to cause swelling and perhaps gangrene below. Over the dry bandage apply another well-soaked in strong starch, and secure the ends. Put the dog in a small cage to limit his movements. The bandage should remain on 14 days, examined daily to see if it is too tight or too loose. Compound fractures should be treated with splints and a simple bandage so arranged that the wound can be inspected without removing the whole apparatus. Comminuted fractures should be treated like simple ones, unless they are also compound, when splints must be applied, and any splinters of bone quite detached should be removed.

In fractures of such bones as the thigh, which cannot be bandaged, the joints below should be fixed, the hair over the fracture cut short, and a plaster applied. Except for pets, these injuries are not worth treatment.

Pleurisy.—During convalescence give the following tonic:

Syr. ferri iodidi	1 ounce.
Inf. gent. co	3 ounces.
Tt. zingib	1½ ounces.

A dessertspoonful thrice daily. Tr. ferri perchlor. may be used in doses of from 10 to 30 drops in infusion of quassia.

Poisoning.—According to an Australian correspondent of The Chemist and Druggist, dogs poisoned by strychnine may be completely and rapidly relieved

even when as stiff as an iceberg, by pouring about a tablespoonful of strong watery solution of tobacco into the mouth. We have relieved a poisoned dog by administering chloroform by inhalation, until the symptoms of poisoning disappeared. It is very difficult to get the dog to inhale the drug. Pull an old woolen stocking over its head and drop the chloroform a little at a time near the nose. Or cut away a little hair from the side, drop a little chloroform on it, and cover with the hand or a wineglass. Repeat until relief is obtained.

Rabies.—Symptoms: First, restlessness and disregard of familiar things, capricious appetite, with a partiality for tearing up and swallowing all sorts of things, as sticks or filth. The animal takes to howling, and snaps at any thing approaching him; there is a peculiar wild look, the eyes steadily following anything moving in front, and also moving as if fixed on imaginary things; the nose and mouth are dry; there is intolerance of light and difficulty of swallowing, which ends in paralysis and convulsions, and death in three or four days. Dumb Rabies is more rapidly fatal, and is accompanied by a paralysis of the lower jaw and a considerable discharge of saliva.

The barking, running, and foaming at the mouth often seen in dogs subject to convulsions must not be mistaken for rabies.

Bites by doubtful dogs should be cauterized, and the animal locked up for a time, to make sure whether it was or was not affected. Solid caustic soda or caustic potash, nitric acid, or solid silver nitrate are the best caustics. Care should be taken to reach the bottom of the wound.

Tonics.—In skin diseases, chorea, or other nervous affections following distemper, use the following:

Fowler's solution..... 1 dram.
Syrup of ginger..... 3 drams.
Water ..... 5 ounces.

A tablespoonful thrice daily.

As a strong, general tonic use

Pulv. cinchonae ..... 4 drams.
Ext. gentianae ..... 2 drams.

Make into 40 pills, and give two twice daily.

Nux vomica (dose, ¼ to 1 grain) and strychnine (dose, 1/20 to 1/12 grain) are rather disappointing as nervous tonics.

The best are tr. ferri perchlor, and syr. ferri iodidi.

Worms.—(a) Round-worms, or ascarides, in the faeces.

Treatment: For ordinary-sized dogs, 1 dram powdered areca nut, made into pills, to be given at night, one after another, and to be followed by 1 ounce of castor oil in the morning. Repeat the treatment a week later. Or 6 grains santonica, made into a pill, and administered as the areca.

(b) Tapeworms, detected by the miserable condition of the dog and the presence of joints of the worm in the faeces.

Treatment: For a medium-sized dog, ½ dram of oil of male fern in linseed tea, or tied up in a small piece of sausage-skin. Repeat in a week, and follow up with tonic medicines.

Or give a mixture of ol. filicis maris and turpentine. This should be tied up in a small sausage-skin, when the dog will bolt it whole, otherwise it is sure to be rejected by vomiting.

PIGS.

General.—If the nature of the disease is doubtful, bleeding at the ear and tail may always be tried, and an ounce of powdered sulphur may be given every morning in thin bran wash.

Bleeding.—The easiest plan is to turn the ear back on the poll, and press the fingers on the base of the ear; this will make one or more veins prominent which can be easily opened. When the pressure of the finger is removed the blood will cease to flow. The palate veins which run on either side of the roof of the mouth are also easily opened by making two incisions, one on each side of the palate, about half way between the centre of the roof of the mouth and the teeth.

Medicine for Pigs should be mixed with the food. Where this fails, as in total loss of appetite, the draught is used. Great care must be taken not to give fluids to these animals while they are squealing, as they are very easily choked. The following method of administration has been recommended: Tie the pig by the neck with a long rope to a post in an open space. It will run round squealing till it gets tired, and then stop to think. Meanwhile, cut off the toe of an old boot, and, when the pig stops, thrust the end into its mouth. It will begin to chew it, and the draught may be safely poured through this impromptu funnel. Another plan is as follows: Let a man get the head of the animal firmly between his knees, without, however, pinching it, while another secures the hinder parts. Then let the first take hold of the pig's head from below, raise it a little and incline it slightly towards the right, at the same time separating the lips on the left side so as to form a hole into which the fluid may be gradually poured, not more being introduced into the mouth at a time than can be swallowed at once.

Apoplexy, when it occurs, is generally rapidly fatal. There are dullness, disinclination to move, heaviness of the head, uncertain staggering gait, wildness, and inflammation of the eyes, with apparent loss of sight, loss of appetite, and general numbness. Bleed promptly from the palate, give magnesia sulphate and sulphur as purgatives, or tartar emetic in water. For some time afterwards heating diet must be avoided, and a little nitre added to the water.

Cold results from insufficient food, or from taking in too much air while being driven against the wind. The appetite is small, the animal gets stiff, readily lies down, the ears are cold. Bleed at ear and tail; administer ½ ounce juniper berries mixed with ½ ounce gentian and 1 dram camphor once a day in water till the disease vanishes.

Constipation frequently follows farrowing, and as the mass excrement presses on the urethra and prevents the escape of the urine, inflammation of the bladder is apt to result, often causing the death of the animal. An enema of soap and warm water, or oatmeal and water, should be given daily,

with a little compulsory exercise three or four times a day until relieved. The food should be scalded beans for a few days, then oatmeal or toppings.

Cough.—Slight coughs are cured by feeding with sour milk. For cough resulting from chill, make an electuary of aniseed, 1½ ounces; licorice, 1½ ounces; honey, 4 ounces; and twice a day rub on the tongue a piece the size of a walnut. These coughs must not be neglected, or they may result in consumption or intestinal diseases. Where this has already taken place, make an electuary of equal parts of gentian, licorice, and flowers of sulphur with sufficient honey, and twice a day rub on the tongue a piece the size of a walnut.

Diarrhoea results from cold. Give a handful of juniper berries once, or ¼ ounce tormentilla root twice a day. Allow no milk. Diarrhoea, or scouring, in sucking pigs, may be treated by giving the sow a few old beans or a little bole in the food. Young pigs bred on stone floors are almost sure to have diarrhoea.

Dropsy of the Belly follows wet weather. The animal is dull and off its feed, and the belly swells. It is generally relieved by keeping it in the house. If the swelling of the belly does not diminish, give morning and evening, for eight days, ½ ounce of the following powder in the food: Juniper berries, gentian root, and calamus root, of each equal parts. After eight days dissolve ½ pound Burgundy pitch in 1 pound linseed oil, add 1 ounce balsam of sulphur, 4 ounces herb prunella, and enough parsley seed to make an electuary. Give daily for four days a piece the size of a walnut rubbed on the tongue; then give the powders for eight days, then the electuary for four days, and so on till the cure is complete.

Epilepsy. — Symptoms: Repeated grunting, restlessness, rapid breathing, pallor of the skin, staggering gait. The pig falls suddenly, lies motionless for a time; convulsions then come on and increase rapidly, the animal remaining unconscious till the fit is over. It then gets up, and seems terrified, trying to hide.

Treatment is rarely successful and the disease frequently spreads to all the first patient's companions. Bleeding, strong purges, and cold affusion of the head are indicated. Wrap the head in a cloth and keep this wet with a mixture of 1 quart of water, 1 pint of vinegar, and 1 ounce of salammoniac. —Youatt.

Eye Diseases. — Accumulations of gluey pus round the eyes, especially in porkers. Cleanse the eyes carefully with milk, and anoint daily with camphorated white-lead ointment.

Gripes, or Colic.—The animals do not eat, and bend themselves up. Give a decoction of camomiles with olive oil. If not relieved in half an hour give another dose. Caraway is also useful. A dose of castor oil proportioned to the strength of the patient should be given with a little ginger.

Hipshot.—The animal is lame in the back, or "hipshot." The hind legs will not bear its weight, and there are generally small bladders on the tongue. Cleanse the mouth with salt-water or lye. Rub the loins with a mixture of 4 parts of cantharides ointment and 2

parts of turpentine oil. Mix 1 ounce cream of tartar, 3 drams camphor, and 1 ounce nitre; divide into 12 parts, and give one thrice daily in water.

Inflammation of the Brain.—Symptoms : At first, dulness, redness of the eyes, then wild, ill-directed movements; the pig runs against obstacles, the pulse is small and quick. Bleed from the ears and wash them with warm water to hasten the flow. Give Epsom salts with ginger. Administer enemas and afterwards repeated doses of sulphur.

Inflammation of the Lungs, or Rising of the Lights.—The prominent symptoms are loss of appetite, incessant and distressing cough, and heaving at the flanks. At the very first the animal must be bled, preferably from the palate. Give 2 to 4 drams each of sulphur and Epsom salts, according to the strength of the animal. Follow with a powder of digitalis, 2 grains; antimonial powder, 6 grains; nitre, 30 grains; twice daily. Keep the animals clean, warm, and well fed.

Loss of Tail.—High-bred pigs are very apt to lose their tails when young. The disease shows itself when a day and a half old. A red spot shows itself, which gradually spreads all around the root of the tail, destroying the cuticle. If once round there is little chance of saving the tail; but if at the first all the red place be well scraped with the nail or a penknife until it bleeds, and afterwards greased, a scab will form and new skin will grow and the tail will be saved.—G. Mangles. It would be worth while to try the effect of silver nitrate.

Madness.—When it results from the bite of a rabid dog the wound must be cut out with a sharp knife, and the place often washed with salt water. When inflammation of the brain is the cause the animal is dull, does not eat, the eyes are staring and glassy, the ears warm, mouth hot and dry, it stamps its feet, scratches itself under the ear, roots in the earth, bites at everything near, and runs against the wall. Immediately cut a piece off the tail, and make an incision in the lower surface of the ear. Give thrice daily a dram of nitre in water, wrap the head in cloths, and keep it moistened with cold water. Mix 2 drams cantharides ointment with 2 ounces lard, and rub therewith a hand's-breadth on both sides of the throat near the shoulder. Repeat this till recovery is made. Sour milk is the best food.

Maggots in the Ear.—Symptoms: Head-shaking, rubbing the ears, and scratching them with the hind legs. It results from the deposit of flies' eggs in the ear. Remove the maggots and apply turpentine till complete relief is obtained.

Measles.—Hydatids, which affect the whole body. Symptoms: Under the tongue are found small swellings. Mix tormentilla, 2 ounces; alum, 1 ounce; gentian, 4 ounces; and give 2 spoonfuls twice daily with the food.

Pocks.—Small sores form, which break, leave a scab and disappear. The eye is specially attacked and ul-

cerated. Wash the places often with lukewarm milk, and cleanse them from matter, otherwise the animal will be blinded. The disease is rapidly contagious. Feed with whey, and add to the food ½ ounce of a mixture of 2 ounces of sulphur and 4 ounces of juniper berries.

Quinsey, or Strangles.—One of the most malignant of the diseases of swine. Chill seems the chief cause, and the disease is commonest in spring and autumn. There is a loss of appetite, the ears hang, the nostrils secrete mucus, the head is shaken, the mouth is dry and hot, the ears cold, the eyes watery, ultimately the throat swells, the tongue becomes red and then brown, the voice lower. Immediately let blood at the ear and tail. Give daily in whey 1 dram saltpetre and ¼ ounce Glauber's salt. If the symptoms are already threatening, make an incision two fingers broad on the under surface of the ear where the veins lie thickest, and cut off a piece of the tail. Give whey medicated as above, as much as the animal will take. If it will not, or cannot, swallow, mix 4 ounces Glauber's salt and 2 ounces nitre with enough honey to make an electuary, and rub ½ ounce on the tongue every four hours. Youatt thus describes the disease and treatment: The glands under the throat begin to swell, respiration and swallowing are impeded, hoarseness and debility supervene; the neck swells and rapidly goes on to gangrene, the tongue hangs from the mouth and is covered with saliva. Bleeding and purgatives are indicated, with setons and punctures of the swollen glands.

Running Fire should be treated like foot disease of sheep.

Scab.—A scurf appears on the skin which causes itching, so that the pig rubs itself against anything handy. Mix 1½ ounces black antimony and 1 ounce golden sulphide of antimony, and give a little with the food thrice daily. Wash the affected places with decoction of beech leaves. If this gives no relief make an ointment of nitre, sulphur, and linseed oil; rub the affected places with this, and wash the animal often.

Snuffles, Sniffles, Nasal Catarrh.—There is first a slight discharge of mucus from the nostrils, gradually increasing till it causes cough, sneezing, and difficulty of breathing. The membrane of the nose becomes thickened and the nostril swollen and deformed. Blood is often discharged from the nostril, which gives temporary relief, but the hemorrhage is apt to recur, and so undermine the animal's strength. The best treatment is the administration of copper sulphate night and morning, in doses of 3 to 5 grains, with good food and cleanliness. The disease is often fatal, as it is generally well established before it is noticed.

Splenitis.—The pig avoids companions, and buries itself in the straw; it has no appetite, but excessive thirst; the respiration is short, there is cough, vomiting, grinding of the teeth, and foaming at the mouth. The groin is wrinkled, pale brown; the skin of the throat, chest, and belly

(which latter is hard and tucked up) is tinged with black. Let blood copiously, purge gently, and give cooling medicines. Give a cold shower-bath in the neighborhood of the spleen by means of a watering-pot.

Spleen.—The breathing is short, cough dry, the animal runs in circles. Immediately let blood, drench with water, and give cream of tartar in whey. Mix fennel powder, 1½ ounces; rhubarb, ½ ounce; sal-ammoniac, 2 ounces; divide into 12 powders, and give one at a time mixed with the food.

Sprains, Sores and Bruises.—Collection of pus must be opened, washed, and anointed with turpentine oil till healed. Bad bruises, resulting from blows, rub with a mixture of 2 ounces soap and 1 dram powdered camphor. Sprains treat likewise.

Stye.—A white blister the size of a pea on the tongue, which indicates a violent and very dangerous fever. There are also loss of appetite, dull eyes, rooting with the snout, trembling, uneasy grunting. Relief is sometimes obtained by opening the blister, and rubbing the wound with salt and vinegar.

Swine Fever, Cholera, Typhoid Fever, the Purple or Soldier Disease is on the list of the Contagious Diseases. As in glanders and farcy, notice of disease must be given to the nearest police constable, or to the veterinary inspector.

As soon as the animal is pronounced affected with the disease it is slaughtered and buried by the local authority, who pays one-half of the value of all animals slaughtered.

The disease is highly contagious, and, as the owners receive compensation—which is not the case in glanders or farcy—the safest way for all parties concerned is to stamp out the disease at once.

Vomiting.—Prevent the pig from eating its vomit. Dissolve the white of two eggs in two gallons of water and allow the animal to drink of this every two hours, or give thrice daily ½ pint of camomile tea.

Worms.—The animal never thrives, although the appetite is voracious; there is cough, restlessness, squeaks of pain, savage snapping at other animals; dull, sunken eyes, hard, high-colored excrement. Turpentine may be given with safety, but other vermifuges do not seem to have been tried.

POULTRY.

Apoplexy.—Birds, apparently in robust health, fall suddenly, and are found either dead or insensible. The only hope of cure is immediate bleeding by opening one of the largest veins on the inner side of the wings by a longitudinal incision. So long as the thumb is pressed on the vein at any point between the body and the cut, blood will flow. The disease may be prevented by carefully avoiding over-feeding.

Baldness and White Comb.—White comb is a hard scurfy condition of the organ. Give good food and exercise,

and a 5-grain Plummer's pill every night for a week.

Catarrh and Roup.—Catarrh shows itself by a watery or adhesive discharge from the nostrils with swelling of the eye-lids. When the discharge becomes purulent and offensive, and the other symptoms are aggravated, the disease is called Roup. A dry, warm situation and stimulating food relieve slight cases. In roup the eyes and nose should be frequently washed with warm water. Balsam of copaiba in membranous capsules is the best remedy. Composition powder has been used with good effect. As the disease is contagious, the affected bird, unless it is of great value, should be killed and carefully buried.

Crop-bound.—This name is given to distension of the crop, either by overfeeding and subsequent swelling of the grain, or by the presence of some single object too large to pass into the stomach. Cut into the upper part of the crop with a sharp penknife, loosen the mass with some blunt instrument and remove it; if very offensive, wash the crop out with warm water. Feed for a few days on sort food. If the incision is small it may be left, if large a stitch or two should be inserted.

"Douglass Mixture" for Moulting Birds.—Dissolve 1 ounce of iron sulphate in 1 quart of water, add 1 dram of dilute sulphuric acid, and put 1 teaspoonful of this mixture in each quart of drinking water. When chickens droop and seem to suffer as the feathers on the head grow, give them once a day meat minced fine and canary seed.

Leg weakness should be treated by tonics and good food. Give 3 to 8 grains of ferri et ammon. citr. once a day.

Paralysis affecting either of the limbs is incurable.

Vertigo.—The birds run in circles or flutter about without control of their movements. Hold the head under a stream of cold water for a time. Give 3 grains of calomel and 10 of jalap. Keep on low diet.

TURKEYS AND HENS.

Consumption.—Sores over the tail. When ripe, open them with a penknife, and sprinkle the wound with tobacco ashes.

Diarrhoea is caused by too much green food. Give warm food, chickpeas, and powdered tormentilla. Or give 5 grains each of powdered chalk and rhubarb and 3 grains of cayenne pepper. If the flux is not checked give 1 grain of opium and 1 grain of ipecacuanha every four hours.

Epilepsy.—Give wine, and anoint the head with olive oil. Much green food must not be given.

Lice result from uncleanliness. The birds should be washed daily with cows' urine or wormwood boiled in water, and the animal and stall often sprinkled therewith. Or, better, dust into the feathers flowers of sulphur or sawdust moistened with benzoline or

carbolic acid; and lime-wash the hen house, adding a little carbolic acid to the wash.

Mortality.—Occurs in summer. Dig up a red ant's nest, and put it in the run. The hens fall on it greedily; diarrhoea is produced, and the greater disease almost always disappears.

Pip.—This is commonest among the young ones. To prevent it, add to the drinking water thyme or pepperwort or nigella seed, and let tnem often run among green food. The pip—a white, horny skin—should be cut from beneath the tongue with a sharp penknife, and taken out. Moisten the part with salt dissolved in wine vinegar, and give nothing to eat. Bread cut in cubes and soaked in vinegar is good later on.

Worms on the Head.—Hang the birds up and search the head thoroughly. If small brown worms are found, which quickly become larger and feed on the head, drench with fish oil, and thereafter rub with this occasionally.

GEESE.

Diarrhoea.—Place the twigs and buds of a young pine tree bruised in the drinking water. Mix bruised thistles with groats as food, and once a week add some tobacco ashes.

Gnats and Flies creep into the little cavities in the ears and nostrils of young geese and kill them. Anoint the ears in June and July with linseed or olive oil. If the disease is severe, put barley at the bottom of a deep trough filled with water. The birds in reaching for the food put their heads deep into the water and wash the vermin out. Fresh fern leaves often strewed in the run drive away the insects.

Lice generally affect the young in summer. Rub the affected places with tobacco ashes, or with a mixture of fish oil and rape oil; anoint the head and the sides under the wings. If they show themselves on the throats of young geese, which is often fatal, rub the throat with mercurial ointment.

Mortality.—As a preventive, give every other morning half a spoonful of salt. Boil bearwort (Meum athamanticum) and give the decoction as drink. Feed with grain, barley, and bruised thistles, and once a week sprinkle tobacco ashes on the food when the birds come from pasture.

Pip.—Greater pimpernel plant should be steeped in water, the herb given as food and the infusion as drink. The sore should be cut off, and the wound anointed with unsalted butter.

Swelling of the Crop results from eating too much fresh corn. Pay attention to the feeding, and if the crop swells, soak bread in brandy and give as food.

PIGEONS.

Pigeons should always be supplied with old mortar or chalk in a box, where they can peck at it; and with a lump of common salt in another vessel. It is a good plan to put some

lavender-stalks about the pigeon-house occasionally, and before stocking it.

The Parasites that infest pigeons are fleas, lice, feather lice, mites, and ticks. Persian insect powder is efficacious in all cases. Fleas may be killed by sprinkling a little snuff over the birds and into their nests.

Lice usually attack weak birds. A little powdered sulphur should be dusted among the feathers, and the birds should be kept clean and in good condition.

Mites are very small insects which inhabit the cracks and nooks in the walls of the pigeon-house, issuing at night to feed on the blood of the birds. They sometimes enter the ears of young birds and cause intense annoyance. A drop of oil on the ears, under the wings, or wherever mites are seen, will destroy them. The walls should be smoothed and all cracks stopped. Birch twigs and heath should be given for the nests instead of hay. The house may be whitewashed.

Ticks are larger parasites, infesting generally the head and back. Cleanliness and sulphur are the only remedies.

Feather lice are long, flat, tough insects which cling very tightly between the fibres of the feathers. Their food is the down on the quill end of the feathers.

Canker is a cheesy stinking growth on the mucous membrane of the mouth and throat. It is very fatal to young birds and is thought to be contagious. Dissect away the cheesy growth with a bit of wood cut like a spatula. Touch the spot with lunar caustic. Give scanty diet and much exercise. If the flesh round the eyes is wounded by fighting bathe with salt water for several days, and if this does not succeed try alum and water.

Moulting.—If there are any broken stumps of feathers which the bird cannot remove, considerable suffering results. The stumps must be withdrawn one by one with a pair of pincers. Give plenty of good but not oily food.

Pouters sometimes overgorge themselves with dry food, which swells in the crop, and is apt to cause death. The crop should be opened with a sharp penknife, the mass removed, and the wound sewn up. If skillfully performed, the operation is very harmless.

Roup affects the mucous membranes of the mouth, nostrils and air passages. Warmth will cure slight attacks. A copaiba capsule is almost a specific. When the discharge from the nostrils is offensive and purulent, apply to the eye a lotion of nitrate of silver, 5 grains to 1 ounce. The birds must be kept warm and well nourished; hempseed should be given. Dry roup is known by the dry, husky cough. Give 3 or 4 cloves of garlic every day.

Scouring, or Diarrhoea, is caused in weak birds by want of exercise. Add a pinch of sulphate of iron to the drinking water.

Scrofula shows itself in various forms. As Wing disease it forms deposits of cheesy and scrofulous matter in and around the joints, especially of

the elbow. In early stages tincture of iodine applied externally may cure; but in advanced cases the bird should be killed. When it attacks the liver scrofula causes the formation of white tubercles. The birds lose flesh and are said to "go light." They must be destroyed.

Sore Eyes are common among carriers and barbs. A lotion or ointment of silver nitrate should be applied. Among old birds there is a tendency to form spouts by the turning out of the lower eye-lid. These may be removed by being cut from below upwards with a very sharp pair of scissors.

Vertigo occurs in highly fed birds. Starve for two or three days, and reduce the food afterwards.

Wasting is said to be cured by green food, especially watercress.

CANARIES.

Asthma.—When this occurs leave off hemp-seed, give only rape-seed and bread soaked in water and pressed, with lettuce or watercress twice a week, and occasionally bread boiled in milk till reduced to a paste. This last must always be made fresh and must be quite cold before giving it to the birds. It is a gentle purge and sensibly relieves them.

Diarrhoea frequently results from chill. Drop a little tincture of camphor in the drinking water or on a lump of sugar.

Egg-bound.—When the bird is egg-bound a small camel's hair pencil should be dipped in castor oil, worked to a point, and gently inserted in the vent of the bird, applying a little round the part affected, and putting a drop or two in the beak.

Red Lice are minute, almost microscopic, parasites, which infest the wings and cause gradual roughening and then shedding of the feathers, so that the pinions gradually become quite bare and red. They have been removed by washing each bird thoroughly with a lotion of white precipitate and water (a pennyworth to half a teacupful), then washing with warm soap and water, wrapping in flannel, and placing before a fire till dry. Insect powder and water would probably be more efficacious.

Sore Feet, as a rule, result from dirt and want of attention. The greatest cleanliness should be observed, and water should be supplied for a bath. If the feet become sore even with this treatment, bathe the feet for five or ten minutes in warm water three or four times a day.

RABBITS.

Liver Complaint shows itself by hard, short breathing. It does little injury to the animal's general health, and none to the flesh. It is best to fatten them and kill them for the table.

Pot-belly Dropsy is caused by wet

vegetable diet, and is incurable, though it may be relieved for a month or two.

Red-water is occasioned by sour food, and must be treated by mild mucilaginous food like dandelion.

Animals that are diseased should be kept apart till the bright skin, clear eye, and dry, well-pelleted dung show that health is restored.

Rot results from feeding on decaying green stuff. The animals lose flesh, and sores appear on the nose and ears. Feed on dry absorbent food, as ground malt, biscuit, dry bread, crushed beans, oak leaves, split-peas, oatmeal, herbs like thyme and sage. Give, morning and evening, ¼ gill of water. If the sores on the ears and nose be allowed to get fast hold the disease becomes contagious; the animals affected must be destroyed, and the hutch cleansed most vigilantly.

Snuffles closely resembles cold in the head, and should be treated by keeping the animal warm and comfortable.

VETERINARY FORMULAS.

Alterative Powder.

Iron oxide	6 ounces.
Black Sulphide of antimony	3 ounces.
Flowers of sulphur	4 ounces.
Nitre	4 ounces.
Caraway oil	1 dram.
Anise oil	1 dram.

Dose, a tablespoonful.

Blister. A

Spirit of turpentine	2 ounces.
Sulphuric acid	3 drams.
Lard	6 ounces.
Venice turpentine	3 ounces.
Origanum oil	2 drams.
Resin (black)	4 drams.
Yellow wax	4 drams.
Cantharides powder	1½ ounces.
Euphorbium powder	1 ounce.

Blister. B

Venice turpentine	4 ounces.
Powdered cantharides	1½ ounces.
Powdered euphorbium	½ ounce.
Turpentine	q. s.

Blister. C

Powdered cantharides	3 ounces.
Euphorbium	1 ounce.
Laurel oil (oil of bay)	2 ounces.
Resin ointment	2 ounces.
Turpentine	q. s.

Liq. Blister.

Powdered cantharides	4 ounces.
Euphorbium	1 ounce.
Turpentine	1 pint.

Digest. Methylated spirit may be substituted for the turpentine.

Calves' Cordial.

Also the best medicine for diarrhoea in pigs.

Chalk	1 ounce.
Catechu	½ ounce.
Ginger	2 drams.
Opium	½ dram.

Mix and dissolve in ½ pint of peppermint-water.

For a pig give ½ ounce to 1 ounce twice a day; a teaspoonful will be enough for sucking pigs.

Cleansing Drench.

Nitre	1 ounce.
Flowers of sulphur	1 ounce.
Iron oxide	½ ounce.
Diapente	2 ounces.
Sodium sulphate	4 ounces.
Magnesium sulphate	4 ounces.

Mix. Divide into two doses, and administer each in a quantity of gruel.

Condition Powder. A

Sublimed sulphur	equal
Nitrate of potash	quantities.
Black antimony	

Dose, ½ ounce. Or—

Condition Powder. B

Sulphate of iron	2 parts.
Powdered gentian	2 parts.
Nitrate of potash	1 part.

Dose, ½ ounce.

Cordial Drinks are generally composed of some warm aromatic, such as ginger or caraway, with 1 pint of strong ale.

Cough Balls. A

Powdered ipecacuanha	1 dram.
Powdered squills	1 dram.
Honey and licorice powder, of each enough to make a ball.	

Cough Balls. B

Powdered gum ammoniac.	½ ounce.
Powdered ginger	1½ drams.
Powdered squills	1 dram.
Honey and licorice powder.	q. s.

Diapente.

Gentian	4 ounces.
Turmeric	4 ounces.
Fenugreek	4 ounces.
Ginger	4 ounces.
Anise oil	1½ drams.
Clove oil	1½ drams.
Caraway oil	1½ drams.

Diuretic Mass.

White resin	30 ounces.
Nitrate of potass	15 ounces.
Lard	6 ounces.
Linseed oil	6 ounces.
Oil of juniper	1 ounce.

Melt the resin and add the oils and lard. Next add the nitre and stir until nearly cold, when the mass should be transferred to a slab and worked with glycerine.

Elliman's Embrocation.

Hager gives the subjoined formula:

Whites of two eggs	50 grammes.
Water	50 grammes.
Crude pyroligneous acid.	50 grammes.
Spirit	60 grammes.
Turpentine oil	3 grammes.

Eye Lotion.

Zinc acetate	2 drams.
Henbane extract	2 drams.
Rectified spirit	3 ounces.
Camphor spirit	1 scruple.
Water to make	36 ounces.

Fever Balls. A

Nitrate of potash	2 drams.
Camphor	1 dram.
Tartar emetic	10 grains.
Honey	q. s.

Fever Balls. B

Omit the tartar emetic and substitute:

Calomel	15 grains.
Opium	15 grains.

Gripe Drench.

Chloroform	4 ounces.
Pimento oil	½ ounce.
Camphor	½ ounce.
Opium powder	½ ounce.
Rectified spirit	1 pint.
Chillies	1 ounce.

Macerate the opium and chillies in the spirit for seven days, filter and mix the other ingredients. Dose, 1½ ounces, with 1 ounce of spirits of nitre, in a pint of warm gruel.

Lotion for Cracked Hoofs, Etc.

Commonly known in Scotland as the White Bottle:

This consists of

Sulphate of zinc	1 ounce.
Sugar of lead	1 ounce.
Water	1 quart.

Mange Liniment.

Sulphur	4 ounces.
Powdered white hellebore	1 ounce.
Turpentine	2 ounces.
Linseed oil	22 ounces.

Bran Mash.

Mashes.—Bran Mash: Put half a peck of bran into a pail and saturate thoroughly with boiling water. Stir well and cover it, and let stand till of the temperature of new milk. Various ingredients, such as treacle, honey, sweet ale, etc., are occasionally added.

Malt Mash is made in the same way.

Oatmeal Gruel.

Oatmeal Gruel.—Put 1 pound of good oatmeal into a basin and add about 1 pint of cold water. Mix this thoroughly, and then boil it with water to form 1 gallon of gruel.

Ointment for Grease.

Citrine ointment	2 ounces.
Lard	2 ounces.
Turpentine	½ ounce.
Sat. sol. nitrate of copper	2 drams.

Ointment for Horses' Knees.

Mercurial ointment	1½ ounces.
Honey	1 ounce.
Camphor	2 drams.
Burned cork, powdered	¼ ounce.

Physic Mass.

Physic Mass.—Probably no veterinary medicines are more in demand than physic and diuretic mass. To have these, therefore, always in good condition, whether divided into balls or in bulk, is clearly a matter of the greatest importance. Should the mass or ball get to be too hard from age or other cause it will certainly be erratic in its action, while if it be not uniform in consistence and composition it will be apt to cause more or less irritation. The physic mass should in every case be made with the finest aloes, and no excipient will be found to equal glycerine. The aloes should be melted by the aid of steam, and the glycerine added in the proportion of one to six in the winter season and one to eight in the summer. A smaller proportion of glycerine will answer the purpose if the aloes is first melted, then poured on a slab and the glycerine worked into it while hot; but this entails more labor and attention. A good apparatus for melting the aloes may be made (of any size) on the principle of a joiner's gluepot —the outer pot for boiling the water into which the smaller pot containing the aloes and glycerine is inserted. The pots may be made of any size sufficient to melt from 1 pound to 5 pounds of aloes. For larger quantities special apparatus must be devised. The mass thus made requires no special care in keeping; it will keep uniform in softness for any length of time, and will prove more easily soluble than that prepared by any other method.

Messrs. Elliman & Co. have published the following formula for a physic mass, which is plastic, ductile and soluble:

Best Barbadoes aloes	10 pounds.
Glycerine	1 pound.
Castor oil	1 pound.
Powd. unbleached ginger..	½ pound.

Dissolve the aloes in the glycerine by means of a water-bath, then add the castor oil, and lastly stir in the ginger previously sifted through a coarse sieve. The balls thus made will not retain their shape, but may be wrapped in waxed paper and put up in boxes like marking ink cases.

Treatment of Distemper.—Distemper is a typhoid inflammation of the air passages of young dogs, and is accompanied by low fever and debility. It may be recognized by the watery inflammatory state of the eyes, the dryness and heat of the nose, accompanied by frequent sneezing and general debility. An emetic of 2 grains each of tartar emetic and ipecacuanha powder for an ordinary-sized dog ought to be given on the symptoms being first observed. This should be followed by a fever treatment of ¼ to ½ grain extract belladonna with 5 grains nitrate of potash three times a day. On the abatement of all the more acute symptoms the tonic treatment may be adapted. This may consist of 1 grain each quinine and iron, with extract of gentian to form a ball—this three times a day.

White Oils.

The following is an approved formula. The oils are an excellent stock liniment for man and beast:

Eggs	12
Soft soap	5 ounces.
Turpentine	12 ounces.
Strong solution of ammonia	6 ounces.
Camphor	5 ounces.
Methylated spirit	10 ounces.
Eucalyptus oil	2 ounces.
Water to make	5 pints.

Wound Stone.

Iron sulphate	2 pounds.
Alum	2 pounds.
Zinc sulphate	4 ounces.
Copper sulphate	4 ounces.

Armenian bole enough to color it.
Put up in 2 ounce packets.

PERFUMERY, COLOGNES, TOILET ARTICLES, Etc., Etc.

To Prepare Handkerchief Extracts.

In the selection of materials for the preparation of fine perfumes, always buy the best pomades, essential oils, and other necessary materials. The spirits used should always be free from the odor of fusel oil or any other contaminating ingredient. Always tell your spirit merchant to give you clean cologne spirits of a strength of 188 or 190 per cent proof government standard (94 to 95 per cent actual). The pomades should be of the highest strength made, and should be purchased from some reliable agent, handling goods of a superior quality and making his importations direct from Grasse. The pomades principally used are cassie, jasmin, orange flowers, rose, tuberose and violet. There are on the market a few other pomades, such as Lily of the Valley, reseda (mignonette), heliotrope, etc., but they are not much in demand, and the first named pomades will be ample for every purpose. The essential oils needed are allspice, almond, bitter; angelica root, German; bay, bergamot, cananga (or kananga), cassia, cinnamon, citronella, cloves, coriander, dill, fennel seed, geraniol hyacinth, geraniol reseda, lavender, lemon, lemon grass, lilac, linaloe, neroli petale, neroli bigarade, nutmeg, orange, orris root, patchouli, rose, rose geranium, sandalwood, vetivert and ylang ylang. These will be enough for ordinary wants.

The other requirements for handkerchief extracts, sachets, etc., will be ambergris, ambrette seed, angelica root, powdered; cardamom seed, carmine, chlorophyll, civet, cloves, ground; coriander seed, ground; coumarin, floral waters (orange flower and rose), gum benzoin, heliotropine, ionone, musc synthetic musk, in grain; orris root, patchouly leaves, sandalwood, ground; styrax, liquid; vanillin, vetivert root, besides such items as coloring, ribbons, etc., etc.

In making perfumery, as with many other lines of business, the amount of money you can afford to put into the cost of the goods will mainly determine the quality of your product. Find out the amount you can obtain for your goods; calculate the cost of selling, store expenses, etc.; add the profit required, and the amount left will be an important factor in determining the expense of your formula.

This article on perfumery is written for men of small means who wish to engage in a pleasant, profitable business, and who do not desire to invest much money in the venture until assured of success.

The formulas of the first quality extracts are based on goods ordinarily sold at $3.50 to $4.00 per pound. Should better goods be desired, reduce the amount of spirits used in washing the pomades; for cheaper goods use more spirits. The formulas for making hardkerchief extracts from oils and tinctures alone are published to enable anyone to compete with the low grade goods offered for ten cents an ounce, at retail. I do not recommend their use, excepting where keen competition compels the offering of something very cheap, yet dear at any price.

To Wash the Pomades.

Take any pomade, say rose. 6 pounds.
Cologne spirits, 188 per cent ..... 14 pints.

Place eight pints of the cologne spirits in an ice cream freezer; melt the pomade gently by the heat of a water bath; pour into the spirits contained in the freezer, turning the handle of the freezer slowly, and continue turning for an hour. Let the pomade stay in the spirits for three days, agitating occasionally, the oftener the better. Pour off the tincture and set aside. Pour into the freezer (containing the pomade) the remaining six pints of cologne spirits and let it remain, with occasional agitation, for three days; carefully drain off the second washing and add to the first. Label this Tincture of Rose. This tincture will have to be filtered at a low temperature, in order to remove the grease held in solution by the strong spirit. The grease may not be visible, but it is there nevertheless. If you are churning your pomade in the winter time (the proper season for work of this kind) set your tincture out of doors until the grease solution is frozen hard, and filter through filtering paper to remove the grease; your tincture is then bright and fit for use. Should you have to wash your pomade, in summer time, after you have finished washing your pomade, place the tincture in your freezer, with some ice and salt, and turn the handle until the fat is hardened. You should also have an ice chest and plenty of ice in it. Stand your receiving bottle with funnel and paper in the ice chest, and filter your tincture at a temperature of about 40 degrees F. to ensure the removal of the grease. Ice cream freezers are very convenient for the washing of pomades, and can be obtained of any size for hand power up to 40 quarts, and larger if required with power attachment. But if your trade is such as to require a churn larger than a 40-quart freezer, you can afford to have a perfumery churn manufactured to order.

The terms, extract of rose, extract of musk, extract of civet, etc., are confusing. I have preferred to call them tinctures, and when they are compounded they may be then known as extracts (see also tinctures for perfumery, directions for making). Remember to keep your spirits, oils and tinctures bright, and save time, expense and waste in filtering your compounds.

Ardeola Bouquet.

Oil of bergamot	2	drams.
Oil of sandalwood	2	drams.
Oil of lemon	1	dram.

Tincture of rose..... 12 ounces.
Tincture of jasmin..... 8 ounces.
Tincture of musc..... 2 ounces.
Tincture of ambergris... ⅛ ounce.
Tincture of vanillin..... 2 ounces.
Tincture of orris..... 4 ounces.
Mix and filter, if necessary.

Bergamot Extract.

Oil of bergamot ..... 1 ounce.
Tincture of civet..... 1 ounce.
Tincture of ambergris..... 1 ounce.
Tincture of musc..... 1 ounce.
Cologne spirits, 188 per cent ..... 32 ounces.
Mix. Color with chlorophyll and filter if necessary.

Bouquet Caroline.

Tincture of cassie..... 16 ounces.
Tincture of violet..... 16 ounces.
Tincture of jasmin..... 16 ounces.
Tincture of orange flowers ..... 16 ounces.
Tincture of musc..... 12 ounces.
Tincture of civet..... 4 ounces.
Tincture verbena..... 8 ounces.
Oil of lemon..... ¼ ounce.
Oil of bergamot ..... ¾ ounce.
Oil of neroli Portugal.... ¼ ounce.
Mix and filter if necessary.
To make Oil of Neroli Portugal mix equal parts of oil of neroli petale and oil of neroli bigarade.

Bouquet Essence.

Ess. Bouquet.

Tincture of rose..... 16 ounces.
Tincture of orange flowers ..... 16 ounces.
Tincture of ambergris... 3 ounces.
Tincture of civet..... 1½ ounces.
Tincture of orris root... 16 ounces.
Tincture of styrax..... ½ ounce.
Oil of bergamot..... ¾ ounce.
Oil of lemon..... ¼ ounce.
Oil of lavender..... 1 dram.
Mix and filter if necessary.

Bouquet Tip Top.

Tincture of rose..... 16 ounces.
Tincture of tuberose.... 16 ounces.
Tincture of benzoin..... 1 ounce.
Tincture of civet..... 1 ounce.
Tincture of vanillin.... 1 ounce.
Oil of bergamot..... 1 ounce.
Oil of lemon ..... ¼ ounce.
Oil of orange sweet..... ¼ ounce.
Orange flower water.... 4 ounces.
Mix and filter.

Bridal Bouquet. A

Tincture of tuberose.... 16 ounces.
Tincture of cassie..... 8 ounces.
Tincture of orange flowers ..... 8 ounces.
Tincture of civet..... 1½ ounces.
Tincture of geranium.... 16 ounces.
Tincture of ambergris... 4 ounces.
Oil of bergamot..... ½ ounce.
Oil of rose..... 1 dram.
Oil of neroli Portugal.... 1 dram.
Oil of orange sweet..... 1 dram.
Orange flower water..... 4 ounces.
Cologne spirits, 188 per cent ..... 6 ounces.
Mix and filter.

Bridal Bouquet. B

Oil of rose..... 1 dram.
Oil of neroli petale..... 1 dram.
Oil of bergamot..... 2 drams.
Oil of coriander..... 10 drops.
Oil of pimento..... 5 drops.
Oil of lavender..... 5 drops.

Tincture of orris..... 8 ounces.
Tincture of jasmin..... 8 ounces.
Tincture of musc..... 4 ounces.
Tincture of benzoin..... 2 ounces.
Cologne spirits, 188 per cent ..... 10 ounces.
Mix and filter if necessary.

Bouquet D'Amour.

Tincture of musc..... 4 ounces.
Tincture of civet..... 2 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of cassie.....16 ounces.
Tincture of jasmin..... 8 ounces.
Tincture of violet.....16 ounces.
Tincture of orange flowers.. 4 ounces.
Mix and filter if necessary.

Carthage Bouquet.

Tincture of rose.....32 ounces.
Tincture of tuberose.....24 ounces.
Tincture of orris.....12 ounces.
Tincture of ambergris.... 4 ounces.
Tincture of musc..... 2 ounces.
Oil of bergamot..... 1 ounce.
Oil of lemon..... ¼ ounce.
Mix and filter if necessary.

Clove Pink. A

Tincture of jasmin.....16 ounces.
Tincture of orris.....16 ounces.
Tincture of musc..... 8 ounces.
Tincture of benzoin..... 1 dram.
Oil of rose geranium..... 1 dram.
Oil of cloves..... ½ dram.
Oil of neroli Portugal..... 1 dram.
Oil of pimento.....10 drops.
Oil of patchouli.....10 drops.
Oil of sandalwood..... 1 dram.
Cologne spirits, 188 per cent .....10 ounces.
Orange flower water..... 2 ounces.
Mix and filter.

Citronelle Rose—Cheap.

Cologne spirits, 188 per cent.1 quart.
Oil of orange sweet.....2 ounces.
Oil of rose geranium.....3 drams.
Oil of rose.....1 dram.
Oil of citronella.....1 dram.
Tincture of civet.....2 ounces.
Water .....4 ounces.
Mix and filter.

Crab Apple.

Oil of ylang ylang.....30 drops.
Oil of mace liquid.....10 drops.
Oil of wintergreen..... 2 drops.
Oil of linaloe.....20 drops.
Oil of coriander.....20 drops.
Oil of hyacinth geraniol... 5 drops.
Tincture of cassie..... 2 ounces.
Tincture of violet..... 4 ounces.
Tincture of musc..... ¼ ounce.
Tincture of styrax..... ½ dram.
Mix and filter if necessary.

Cremorne Valley.

Tincture of jasmin.....10 ounces.
Tincture of orange flowers.10 ounces.
Tincture of rose.....20 ounces.
Tincture of violet.....10 ounces.
Tincture of musc..... 1 ounce.
Tincture of ambergris.... 1 ounce.
Oil of bergamot..... ½ ounce.
Oil of hyacinth geraniol.. 1 dram.
Mix and filter if necessary.

Enchantment Bouquet.

Oil of bergamot..... 7 drams.
Oil of cloves.....20 drops.
Oil of rose geranium.....40 drops.
Oil of neroli petale..... 1 dram.
Oil of orange sweet..... ½ dram.
Tincture of benzoin..... 5 drams.
Tincture of orris..... 8 ounces.

Tincture of vanillin..... 1 ounce.
Tincture of nutmegs..... ½ ounce.
Cologne spirits, 188 per cent .....14 ounces.
Orange flower water..... 2½ ounces.
Mix and filter.

Framlingham Bouquet.

Tincture of violet.....20 ounces.
Tincture of orange flowers..20 ounces.
Tincture of tuberose.....10 ounces.
Tincture of cassie.....20 ounces.
Tincture of rose geranium..16 ounces.
Tincture of musc..... 4 ounces.
Tincture of ambergris..... 4 ounces.
Tincture of neroli Portugal.. 2 ounces.
Mix and filter if necessary.

Frangipanni—Single Strength.

Tincture of orris..... 8 ounces.
Tincture of tuberose..... 4 ounces.
Tincture of musk..... 8 ounces.
Tincture of vanilla..... 4 ounces.
Tincture of jasmin..... 2 ounces.
Tincture of styrax..... 1 ounce.
Oil of neroli Portugal.... 2 drams.
Oil of rose geranium..... ½ ounce.
Oil of sandalwood..... 2 drams.
Oil of cinnamon..... ½ dram.
Oil of bergamot..... 1 dram.
Oil of lavender.....15 minims.
Cologne spirits, 188 per ct.32 ounces.
Orange flower water..... 4 ounces.
Mix and filter. Color with tincture of red saunders or aniline brown, q. s.

Frangipanni—Double Strength.

Tincture of orange flowers.16 ounces.
Tincture of vanillin.....32 ounces.
Tincture of musk.....20 ounces.
Tincture of coumarin.....20 ounces.
Tincture of civet.....16 ounces.
Tincture of orris.....32 ounces.
Oil of rose..... 1 ounce.
Oil of sandalwood..... ½ ounce.
Oil of neroli Portugal..... 1 dram.
Oil of coriander..... ½ dram.
Oil of hyacinth geraniol... ½ dram.
Oil of reseda geraniol..... ½ dram.
Oil of vetivert..... ¼ dram.
Cologne spirits, 188 per cent ..... 7 ounces.
Dissolve the oils in the seven ounces of spirits; add the tinctures and filter. Color with red saunders or aniline brown, q. s.

Hedyosmia.

Tincture of rose.....16 ounces.
Tincture of jasmin..... 8 ounces.
Tincture of orange flowers 8 ounces.
Tincture of cassie..... 8 ounces.
Tincture of tuberose..... 4 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of ambergris.... 2 ounces.
Tincture of styrax..... ½ ounce.
Oil of bergamot..... 3 drams.
Oil of lemon..... 1 ounce.
Oil of orange sweet..... ½ ounce.
Cologne spirits, 188 per cent ..... 1 pint.
Dissolve the oils in the spirits, add the tinctures and filter if necessary.

Heliotrope.

Tincture of heliotrope (1 to 16) ..... 8 ounces.
Tincture of orris.....16 ounces.
Tincture of rose..... 8 ounces.
Tincture of jasmin..... 8 ounces.
Tincture of styrax..... 2 drams.
Tincture of vetivert..... 2 drams.
Tincture of coumarin..... 8 ounces.
Oil of bergamot..... 2 drams.
Oil of bitter almonds..... 8 drops.
Mix and filter if necessary.

Honeysuckle.

Tincture of rose.....16 ounces.
Tincture of jasmin.....16 ounces.

Tincture of violet.....16 ounces.
Tincture of civet..... 1 ounce.
Tincture of vanillin..... 3 ounces.
Tincture of musc..... 2 ounces.
Oil of rose..... 1 dram.
Oil of sandalwood..... ½ dram.
Oil of bergamot..... 1 dram.
Oil of angelica..... 5 drops.
Cologne spirits, 188 per cent .....10 ounces.

Dissolve the oils in the spirits, add the tinctures and filter if necessary.

Imperial Bouquet.

Tincture of rose.....16 ounces.
Tincture of jasmin..... 8 ounces.
Tincture of violet..... 8 ounces.
Tincture of cassie..... 5 ounces.
Tincture of musc..... 2 ounces.
Tincture of civet..... 2 ounces.
Tincture of styrax..... 1 dram.
Oil of lemon..... ¼ ounce.
Oil of bergamot..... ½ ounce.
Cologne spirits..... 7 ounces.

Dissolve the oils in the spirits, add the tinctures and filter if necessary.

Jasmin.

Tincture of jasmin.....24 ounces.
Tincture of orange flowers.. 6 ounces.
Tincture of cassie..... 3 ounces.
Tincture of civet ..... 1 ounce.
Tincture of orris..... 8 ounces.

Mix and filter if necessary.

Jess.

Tincture of rose.....16 ounces.
Tincture of cassie..... 8 ounces.
Tincture of orange flowers.. 4 ounces.
Tincture of civet..... 2 ounces.
Tincture of tolu..... 2 ounces.
Tincture of vanillin..... 8 ounces.
Oil of rose..... 1 dram.

Mix and filter if necessary.

Jockey Club. A

Tincture of cassie.....17 ounces.
Tincture of tuberose.....20 ounces.
Tincture of jasmin.....17 ounces.
Tincture of rose..... 8½ ounces.
Tincture of vanillin.....10 ounces.
Tincture of civet..... 5 ounces.
Oil of bergamot..... 3 drams.
Oil of lemon..... 3 drams.
Oil of rose geranium..... 1 dram.

Mix and filter if necessary.

Jockey Club. B

Tincture of jasmin.....10 ounces.
Tincture of orange flowers.. 8 ounces.
Tincture of rose..... 8 ounces.
Tincture of cassie..... 8 ounces.
Tincture of coumarin..... 4 ounces.
Tincture of civet..... 2 ounces.
Tincture of musc..... 4 ounces.
Tincture of vanillin..... 2 ounces.
Oil of rose..... 1 dram.

Mix and filter if necessary.

Johnny-Jump-Up.

Tincture of jasmin..... 8 ounces.
Tincture of tuberose..... 8 ounces.
Tincture of orange flowers.12 ounces.
Tincture of vanillin..... 2½ ounces.
Tincture of ambergris.... ¾ ounce.
Tincture of musk..... 4 ounces.
Oil of bergamot..... ¾ ounce.
Oil of sandalwood..... ¼ ounce.

Mix and filter if necessary.

Kensington Bouquet.

Tincture of tuberose..... 6 ounces.
Tincture of jasmin.....32 ounces.
Tincture of rose.....16 ounces.
Tincture of cassie..... 6 ounces.
Tincture of orris.....16 ounces.
Tincture of ambergris..... 1 ounce.
Tincture of musc..... 1 ounce.

Oil of rose..... 1 dram.
Mix and filter if necessary.

Lilac, White or Purple.

Tincture of jasmin.....16 ounces.
Tincture of orange flowers. 1 ounce.
Tincture of civet..... 1 ounce.
Tincture of vanillin..... 4 ounces.
Oil of reseda geraniol.....10 minims.
Oil of muguet (lilac).....60 minims.
Mix and filter if necessary.
Color with purple aniline if purple lilac is desired.

Lily of the Valley.

Tincture of tuberose..... 6 ounces.
Tincture of jasmin..... 8 ounces.
Tincture of civet..... 1 ounce.
Tincture of vanillin..... 2 ounces.
Oil of sandalwood..... 2 drops.
Oil of lily of the valley.....10 drops.
Mix and filter if necessary.

Linden Bloom.

Tincture of jasmin.....16 ounces.
Tincture of musk..... 2 ounces.
Tincture of vanillin..... 2 ounces.
Oil of bergamot..... 4 drams.
Oil of linaloe..... 2 drams.
Mix and filter if necessary.

Lucca Bouquet.

Tincture of rose.....10 ounces.
Tincture of jasmin.....10 ounces.
Tincture of violet.....10 ounces.
Tincture of civet..... 5 ounces.
Oil of rose.....15 minims.
Oil of syringa..... 5 minims.
Oil of lavender.....10 minims.
Mix and filter if necessary.

Mary Stuart.

Tincture of rose.....16 ounces.
Tincture of jasmin..... 6 ounces.
Tincture of musk..... 4 ounces.
Tincture of orris..... 8 ounces.
Tincture of ambergris.... 1 ounce.
Tincture of vanillin..... 4 ounces.
Oil of orange, sweet..... ½ ounce.
Oil of bergamot..... ½ ounce.
Mix and filter if necessary.

May Blossom.

Tincture of jasmin.....25 ounces.
Tincture of musk..... 5 ounces.
Tincture of rose geranium 5 ounces.
Oil of bergamot..... ½ ounce.
Oil of linaloe..... 1½ ounces.
Cologne spirits 188 per ct. 4 ounces.
Dissolve the oils in the cologne spirits; add the tinctures, and filter if necessary.

Mignonette.

Tincture of violet.....16 ounces.
Tincture of rose..... 8 ounces.
Tincture of orange flowers 8 ounces.
Tincture of cassie..... 8 ounces.
Tincture of ambergris.... 2 ounces.
Oil of reseda geraniol..... 1 dram.
Oil of bergamot..... 1 dram.
Oil of rose..... ½ dram.
Mix and filter if necessary.

Millefleurs.

Tincture of jasmin.....8 ounces.
Tincture of rose.....4 ounces.
Tincture of tuberose.....4 ounces.
Tincture of orange flowers.4 ounces.
Tincture of cassie.....4 ounces.
Tincture of orris.....4 ounces.
Tincture of vanillin.....2 ounces.
Tincture of musc.....2 ounces.
Oil of bergamot..... ¼ ounce.
Oil of lavender.....1 dram.
Oil of rose geranium.....1 dram.
Oil of neroli petale.....5 minims.
Mix and filter if necessary.

Moss Rose.

Tincture of rose.....18 ounces.
Tincture of orris..... 3 ounces.
Tincture of orange flowers 4 ounces.
Tincture of musk..... 3 ounces.
Tincture of civet..... 1½ ounces.
Oil of rose..... 1 dram.
Oil of rose geranium..... ½ dram.
Cologne spirits, 188 per ct. 3 ounces.

Dissolve the oils in the spirits, add the tinctures, and filter if necessary.

Musk (from Grain Musk).

Tincture of musk.....16 ounces.
(1 ounce to gallon.)
Tincture of civet..... 1 ounce.
Tincture of ambergris.... 1 ounce.
Tincture of styrax..... ½ dram.
Tincture of orris..... 2 ounces.
Tincture of ambrette seed 3½ ounces.

Mix and filter if necessary.

Musk (from Artificial Musk).

Cologne spirits.....16 ounces.
Artificial musc..... ½ dram.
Tincture of civet..... 1 ounce.
Tincture of ambergris.... 1 ounce.
Tincture of orris..... 1 ounce.
Orange flower water..... 5 ounces.

Mix and filter. Color with aniline brown q. s.

Musk Rose.

Tincture of rose..... 8 ounces.
Tincture of orange flowers.. 7 ounces.
Tincture of musk..... 2 ounces.
Oil of sandalwood..... 2 drops.
Oil of rose.....10 drops.

Mix and filter if necessary.

New Mown Hay. A

Tincture of cassie..... 8 ounces.
Tincture of orris.....16 ounces.
Tincture of coumarin.....24 ounces.
Tincture of civet..... 2 ounces.
Tincture of orange flowers.. 8 ounces.
Tincture of jasmin..... 8 ounces.
Tincture of rose.....16 ounces.
Oil of sandalwood..... 5 drops.
Oil of cloves..... 5 drops.
Oil of neroli, big.....10 drops.
Oil of rose geranium.....20 drops.

Mix and filter if necessary.

New Mown Hay. B

Tincture of tonka.....25 ounces.
Tincture of musk..... 6 ounces.
Tincture of vanilla..... 2 ounces.
Tincture of styrax..... ¼ ounce.
Tincture of orris..... 8 ounces.
Oil of bergamot..... 1 ounce.
Oil of lemon..... ½ ounce.
Oil of neroli, big.....15 drops.
Oil of cloves.....15 drops.
Oil of patchouly.....10 drops.
Oil of sandalwood..... 1 dram.

Mix and filter if necessary.

Night-Blooming Cereus.

Tincture of tuberose.....10 ounces.
Tincture of rose..... 6 ounces.
Tincture of jasmin..... 3 ounces.
Tincture of violet..... 3 ounces.
Tincture of vanillin..... 1½ ounces.
Tincture of coumarin.... 1½ ounces.
Tincture of musc..... 1 ounce.
Oil of neroli Portugal....30 minims.

Mix and filter if necessary.

Opopanax.

Tincture of violet..... 8 ounces.
Tincture of cassie..... 4 ounces.
Tincture of orange flowers 4 ounces.
Tincture of rose..... 8 ounces.
Tincture of orris.....16 ounces.
Tincture of coumarin..... ½ ounce.
Tincture of musk..... 2 ounces.

Oil of rose..... 1 dram.
Oil of bergamot..... 1 dram.
Oil of rose geraniol..... 1 dram.
Oil of patchouli..... 3 minims.
Mix and filter if necessary.

Orange Flowers.

Tincture of orange flowers.16 ounces.
Tincture of civet..... 1 ounce.
Tincture of ambergris.... ¼ ounce.
Tincture of musk..... ¼ ounce.
Tincture of orris..... 1 ounce.
Oil of neroli Portugal....15 minims.
Mix and filter if necessary.

Our Own.

Tincture of rose.....8 ounces.
Tincture of jasmin.....2 ounces.
Tincture of violet.....4 ounces.
Tincture of cassie.....2 ounces.
Tincture of musc..... ½ ounce.
Tincture of ambergris..... ¼ ounce.
Tincture of vanillin.....1 ounce.
Tincture of orange flowers. ½ ounce.
Oil of patchouli.....1 drop.
Mix and filter if necessary.

Patchouli.

Tincture of musk..... 4 ounces.
Tincture of orris..... 4 ounces.
Tincture of vanillin..... 2 ounces.
Oil of rose..... ½ dram.
Oil of sandalwood.....20 minims.
Oil of patchouli.....40 minims.
Cologne spirits 188 per ct. 6 ounces.
Rose water..... 2 ounces.
Mix and filter.

Pearl of Pekin.

Tincture of rose.....10 ounces.
Tincture of jasmine..... 6 ounces.
Tincture of cassie..... 2 ounces.
Tincture of musc..... 1 ounce.
Oil of bergamot..... 1 dram.
Oil of neroli Portugal.... ½ dram.
Mix and filter if necessary.

Perfection.

Tincture of rose.....8 ounces.
Tincture of orange flowers.8 ounces.
Tincture of orris.....4 ounces.
Tincture of vanillin.....1 ounce.
Tincture of civet..... ½ ounce.
Tincture of musc.....1 ounce.
Oil of reseda geraniol.....5 drops.
Oil of hyacinth geraniol...5 drops.
Mix and filter if necessary.

Persian Pink.

Tincture of orange flowers.. 4 ounces.
Tincture of rose..... 8 ounces.
Tincture of cassie..... 4 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of musc..... 2 ounces.
Oil of cloves.....10 drops.
Oil of sandalwood..... 5 drops.
Mix and filter if necessary.

Pink.

Tincture of rose.....10 ounces.
Tincture of orange flowers.. 6 ounces.
Tincture of cassie..... 4 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of ambergris..... 1 dram.
Oil of cloves..... 5 drops.
Mix and filter if necessary.

Pink (Clove).

See Clove Pink.

Pond Lily.

Tincture of coumarin.....16 ounces.
Tincture of orange flowers 8 ounces.

Tincture of cassie..... 2 ounces.
Tincture of musc ..... 1½ ounces.
Tincture of orris..... 2 ounces.
Oil of rose..... 1 dram.
Oil of lily of the valley (D & O)..... ½ dram.
Mix and filter if necessary.

Prairie Blossom.

Tincture of rose..... 8 ounces.
Tincture of violet..... 8 ounces.
Tincture of tuberose.....12 ounces.
Tincture of orange flowers.. 2 ounces.
Tincture of musk..... 3 ounces.
Tincture of civet..... 2 ounces.
Oil of lemon..... 1 dram.
Oil of bergamot..... 2 drams.
Oil of orange, sweet..... 1 dram.
Mix and filter if necessary.

Rondeletia.

Tincture of orris.....10 ounces.
Tincture of jasmine.....10 ounces.
Tincture of musk..... 4 ounces.
Oil of lavender..... 1 dram.
Oil of bergamot.....15 minims.
Oil of cloves..... 5 minims.
Oil of rose.....40 minims.
Mix and filter if necessary.

Rose.

Tincture of rose.....16 ounces.
Tincture of civet..... 1½ ounces.
Tincture of ambergris.... ½ ounce.
Otto of rose..... ½ dram.
Mix and filter if necessary.

Rose of Cashmere.

Tincture of coumarin..... 1 ounce.
Tincture of musk..... 4 ounces.
Tincture of vanillin..... 4 ounces.
Tincture of jasmine..... 6 ounces.
Tincture of orris..... 8 ounces.
Oil of rose..... 2 drams.
Cologne spirits, 188 per ct..10 ounces.
Rose water..... 2 ounces.
Dissolve the oil in the spirits. Add the tinctures and then the rose water —add the latter very slowly, and filter.

Rose Geranium.

Cologne spirits, 188 per ct..16 ounces.
Tincture of civet..... 1 ounce.
Tincture of musk..... 1 ounce.
Oil of rose..... 1 dram.
Oil of rose geranium..... 6 drams.
Oil of bergamot..... 2 drams.
Dissolve the oils in the spirits, add the tinctures, and filter if necessary.

Sandalwood.

Cologne spirits, 188 per ct.12 ounces.
Oil of sandalwood..... 2 drams.
Oil of cedar..... ½ dram.
Oil of melissa(lemon balm)15 drops.
Oil of rose.....15 drops.
Tincture of civet..... 1 ounce.
Tincture of musc..... 2 ounces.
Tincture of orris..... 3 ounces.
Mix and filter if necessary.

Spring Flowers.

Tincture of rose..... 8 ounces.
Tincture of violet..... 8 ounces.
Tincture of orange..... 2 ounces.
Tincture of ambergris.... ½ ounce.
Tincture of civet..... ¼ ounce.
Tincture of musk..... ¾ ounce.
Oil of rose.....30 minims.
Mix and filter if necessary.

Spring Posey.

Tincture of tuberose.....10 ounces.
Tincture of orris.....10 ounces.
Tincture of cassie..... 5 ounces.

Tincture of rose..... 5 ounces.
Tincture of coumarin..... 5 ounces.
Tincture of civet..... 1 ounce.
Oil of bergamot..... 1 dram.
Mix and filter if necessary.

Sweet Brier.

Tincture of rose.....16 ounces.
Tincture of cassie..... 3 ounces.
Tincture of orange flowers 3 ounces.
Tincture of civet..... ½ ounce.
Oil of rose.....30 minims.
Oil of neroli Portugal....15 minims.
Oil of lemon grass..... 1 drop.
Mix and filter if necessary.

Sweet Clover.

Cologne spirits, 188 per ct.16 ounces.
Tincture of vanillin..... 4 ounces.
Tincture of tonka..... 3 ounces.
Tincture of tuberose..... 4 ounces.
Tincture of styrax..... ¼ ounce.
Tincture of civet..... 1 ounce.
Tincture of orris..... 1 ounce.
Oil of rose..... 1 dram.
Oil of bergamot..... 1 dram.
Oil of neroli bigarade..... 1 dram.
Oil of cloves..... 5 drops.
Mix and filter if necessary.

Sweetheart's Garland.

Tincture of jasmine.....14 ounces.
Tincture of tuberose..... 8 ounces.
Tincture of orange flowers 2 ounces.
Tincture of rose..... 2 ounces.
Tincture of vanillin..... 2½ ounces.
Tincture of civet..... 1½ ounces.
Oil of bergamot..... 2 drams.
Mix and filter if necessary.

Sweet Pea.

Tincture of rose..... 4 ounces.
Tincture of orange flowers 8 ounces.
Tincture of tuberose..... 6 ounces.
Tincture of vanilla..... 4 ounces.
Tincture of civet..... ½ ounce.
Oil of rose.....10 minims.
Oil of bitter almonds..... 1 drop.
Mix and filter if necessary.

Sweet Pink.

Tincture of rose.....16 ounces.
Tincture of orange flowers 8 ounces.
Tincture of cassie..... 8 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of civet..... ½ ounce.
Oil of cloves.....10 drops.
Mix and filter if necessary.

Sweet Shrub.

Tincture of vanillin..... 4 ounces.
Tincture of coumarin..... 4 ounces.
Tincture of rose..... 8 ounces.
Tincture of tuberose.....16 ounces.
Tincture of orange flowers.16 ounces.
Tincture of tolu..... 2 ounces.
Tincture of civet..... 1½ ounces.
Oil of rose..... 1 dram.
Oil of rose geranium..... ½ dram.
Oil of bergamot..... ½ dram.
Oil of neroli petale.....10 drops.
Mix and filter if necessary.

Tea Rose.

Tincture of rose.....12 ounces.
Tincture of rose geranium 8 ounces.
Tincture of neroli Portugal 2 ounces.
Tincture of orris..... 2 ounces.
Tincture of civet..... 1 ounce.
Tincture of sandalwood... 1 ounce.
Tincture of styrax..... 1 dram.
Oil of rose geraniol..... ½ dram.
Mix and filter if necessary.

Tuberose. A

Tincture of tuberose.....16 ounces.
Tincture of jasmine..... 2 ounces.

Tincture of orange flowers 4 ounces.
Tincture of civet..... ½ ounce.
Tincture of musk..... ¾ ounce.
Oil of neroli Portugal....20 drops.
Oil of rose.....40 drops.
Mix and filter if necessary.

Tuberose. B

Tincture of tuberose.....14 ounces.
Tincture of rose..... 2 ounces.
Tincture of orris..... 2 ounces.
Tincture of vanillin..... ½ ounce.
Oil of bitter almonds..... 1 drop.
Mix and filter if necessary.

Union Bouquet.

Tincture of rose.....8 ounces.
Tincture of orange flowers.6 ounces.
Tincture of violet.....2 ounces.
Tincture of cassie.....2 ounces.
Tincture of tuberose.....2 ounces.
Tincture of jasmine.....4 ounces.
Tincture of vanillin.....1 ounce.
Tincture of civet..... ½ ounce.
Oil of rose.....1 dram.
Oil of rose geraniol..... ½ dram.
Oil of hyacinth geraniol.... ½ dram.
Mix and filter if necessary.

Upper 10.

Tincture of orris.....4 ounces.
Tincture of violet.....4 ounces.
Tincture of jasmin.....4 ounces.
Tincture of rose.....4 ounces.
Tincture of orange flowers.6 ounces.
Tincture of civet..... ½ ounce.
Tincture of ambergris..... ¼ ounce.
Tincture of musc.....1 ounce.
Oil of rose.....1 dram.
Oil of rose geraniol.....1 dram.
Mix and filter if necessary.

Vandeventer Bouquet.

Tincture of orris.....12 ounces.
Tincture of coumarin..... 8 ounces.
Tincture of vanillin.....16 ounces.
Tincture of musk..... 2 ounces.
Tincture of rose.....10 ounces.
Tincture of violet.....10 ounces.
Tincture of cassie..... 5 ounces.
Oil of rose..... 1 dram.
Oil of hyacinth geraniol.... 1 dram.
Mix and filter if necessary.

Venetian Lily.

Tincture of vanillin..... 4 ounces.
Tincture of tuberose..... 8 ounces.
Tincture of rose..... 4 ounces.
Tincture of cassie..... 4 ounces.
Tincture of jasmine..... 2 ounces.
Tincture of orange flowers. 2 ounces.
Oil of lily of the valley (D. & O).....30 minims.
Mix and filter if necessary.

Violet.

Tincture of violet.....18 ounces.
Tincture of cassie..... 4 ounces.
Tincture of orris..... 2 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of rose..... 4 ounces.
Tincture of ionone..... 1 ounce.
Tincture of musc..... 2 ounces.
Mix and filter if necessary. Color with chlorophyll.

West End.

Tincture of rose.....6 ounces.
Tincture of cassie.....3 ounces.
Tincture of jasmine.....3 ounces.
Tincture of civet.....2½ ounces.
Tincture of orris.....4 ounces.
Oil of rose geraniol.....1 dram.
Oil of cloves.....5 drops.
Mix and filter if necessary.

White Lily.

Tincture of coumarin.... 8 ounces.
Tincture of orange flowers 4 ounces.
Tincture of cassie..... 1 ounce.

Tincture of civet..... 1½ ounces.
Tincture of musk..... 1 ounce.
Oil of rose.....30 minims.
Oil of bitter almonds..... 2 drops.
Cologne spirits, 188 per ct. 4 ounces.
Mix and filter if necessary.

White Rose.

Tincture of rose.....24 ounces.
Tincture of violet.....12 ounces.
Tincture of cassie..... 6 ounces.
Tincture of jasmine.....12 ounces.
Tincture of orris.....16 ounces.
Tincture of musk..... 4 ounces.
Tincture of ambergris.... 1 dram.
Oil of rose..... 1½ drams.
Oil of sandalwood..... 1 dram.
Oil of patchouli.....10 drops.
Mix and filter if necessary. Color light green with chlorophyll.

Woodbine.

Tincture of jasmine.....10 ounces.
Tincture of orange flowers. 4 ounces.
Tincture of tuberose..... 2 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of tolu..... 1 ounce.
Tincture of civet..... 1 ounce.
Oil of neroli Portugal.....30 minims.
Oil of lemon.....30 minims.
Oil of bergamot..... 2 drams.
Oil of rose geraniol..... 1 dram.
Mix and filter if necessary.

Wood Violet.

Tincture of violet.....12 ounces.
Tincture of rose..... 2 ounces.
Tincture of orange flowers 1 ounce.
Tincture of civet..... ½ ounce.
Tincture of ambergris.... ½ dram.
Tincture of orris root..... 2 ounces.
Oil of bitter almonds..... 1 drop.
Oil of patchouli..... 2 drops.
Mix and filter if necessary.

Ylang Ylang.

Tincture of cassie.....8 ounces.
Tincture of jasmine.....2 ounces.
Tincture of orris.....4 ounces.
Tincture of orange flowers 2 ounces.
Tincture of coumarin.....1½ ounces.
Oil of ylang ylang.....1 dram.
Oil of orange, sweet..... ½ dram.
Mix and filter if necessary.

FROZEN OR SOLID PERFUMES.

The solid perfume is merely perfumed hard paraffin. The hard paraffin is melted and perfumed at as low a temperature as possible, and for a mould use the lids of 2 drm. chip boxes.

White Rose Solid Perfume.

Oil of geranium..... ½ dram.
Oil of bergamot..... ½ dram.
Oil of patchouli.....5 minims.
From 1 to 5 drops to each block may be used, according to the moderation or extravagance of the manufacturer.

Lavender Solid Perfume.

Oil of lavender..... 2 ounces.
Essence of bergamot..... 1 ounce.
Oil of cassia..... 5 minims.
Oil of geranium.....40 minims.
Oil of orange..... 5 minims.
Mix and perfume the wax as before.

Bouquet Solid Perfume.

Oil of coriander.....18 minims.
Oil of cloves..... 2 drams.
Oil of nutmeg..... 1 dram.
Oil of lavender..... 3 drams.
Oil of sandal..... 1 dram.
Oil of bergamot..... 1 ounce.

Otto of rose..... ½ dram.
Oil of geranium..... ½ dram.
Oil of orange.....10 minims.
Mix.

Cologne Solid Perfume.

(Zieliz, in Brit. and Col. Druggist.)
Essence of bergamot..... 1 ounce.
Essence of lemon..... 1 ounce.
Oil of citronella..... ½ ounce.
Oil of neroli..... ½ ounce.
Oil of rosemary.....80 minims.
Oil of geranium.....10 minims.
Mix.

CHEAP HANDKERCHIEF EXTRACTS.

Cheap handkerchief extracts, made from oils and tinctures, all of them should be filtered at a low temperature to prevent after precipitation and cloudiness.

Alpine Bouquet.

Oil of bergamot..... 3 drams.
Oil of rose geranium..... 1 dram.
Oil of cinnamon..... ½ dram.
Tincture of vanillin..... 1 ounce.
Cologne spirits, 188 per ct. 20 ounces.
Rose water.....q. s. or 14 ounces.
Magnesia carbonate..... 1 ounce.

Mix the oils and tincture with 4 ounces of the cologne spirits; place the magnesia in a mortar, pour on the solution of oils, and triturate well; take the remaining 16 ounces of cologne spirits, mix with the 14 ounces of rose water, and slowly add to the contents of the mortar, stirring constantly and uniformly for 10 minutes. Filter through filtering paper, and at as low a temperature as possible. If weather is warm, filter in an ice chest at a temperature of about 40 degrees F. The product should measure 2 pints.

Bordentown Bouquet.

Oil of bergamot..... 2 drams.
Oil of lemon..... 1 dram.
Oil of pimento..... 5 drops.
Oil of lemon grass..... 3 drops.
Tincture of orris root..... 2 ounces.
Cologne spirits, 188 per ct..20 ounces.
Orange flower water.....14 ounces.
Proceed as directed for Alpine Bouquet.

Bouquet Essence.

(Ess. Bouquet.)

Oil of lavender.....30 drops.
Oil of neroli.....10 drops.
Oil of bergamot.....30 drops.
Oil of rose.....10 drops.
Cologne spirits, 188 per ct..20 ounces.
Orange flower water.....15 ounces.
Magnesia carb..... 1 ounce.
Proceed as directed for Alpine Bouquet.

Bouquet D'Amour.

Oil of lavender..... 2 drams.
Oil of cloves..... 1 dram.
Oil of bergamot..... 2 drams.
Oil of rose geranium..... 5 minims.
Tincture of coumarin..... 1 ounce.
Cologne spirits, 188 per ct..20 ounces.
Water, q. s. or.....14 ounces.
Magnesia carbonate..... 1 ounce.
Proceed as directed for Alpine Bouquet.

Brighton Nosegay.

Oil of bergamot.....30 drops.
Oil of lavender.....10 drops.
Oil of neroli petale..... 5 drops.
Oil of patchouli..... 1 drop.
Oil of rose geranium.....30 drops.
Oil of lemon grass..... 2 drops.
Oil of cassia..... 2 drops.

Oil of pimento..... 2 drops.
Extract of jasmine..... ½ ounce.
Cologne spirits, 188 per ct.20 ounces.
Water, q. s. or.....14 ounces.
Magnesia carb..... 1 ounce.

Proceed as directed for Alpine Bouquet.

Clove Pink.

Oil of cloves.....10 drops.
Tincture of orris.....10 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of ambrette..... 2 ounces.
Cologne spirits, 188 per ct.. 6 ounces.
Orange flower water..... 5 ounces.
Rose water..... 9 ounces.

Dissolve the oil in the tinctures and cologne spirits; add the waters slowly, and filter through talcum at a low temperature.

Everlasting Bouquet.

Tincture of civet..... 2 ounces.
Tincture of coumarin..... 2 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of orris.....14 ounces.
Rose water.....15 ounces.

Mix the tinctures; add the rose water slowly, and filter through powdered French chalk (talcum).

Frangipanni.

Oil of sandalwood.....1 dram.
Oil of neroli.....1 dram.
Oil of rose geranium.....1 dram.
Tincture of musc.....2 ounces.
Tincture of vanillin.....2 ounces.
Tincture of orris.....8 ounces.
Cologne spirits, 188 per ct...8 ounces.
Cinnamon water.....7 ounces.
Orange flower water.....7 ounces.

Proceed as directed for Alpine Bouquet.

Heliotrope.

Tincture of heliotrope..... 4 ounces.
Tincture of civet..... 2 ounces.
Tincture of orris..... 8 ounces.
Tincture of coumarin..... 1 ounce.
Tincture of ambrette..... 5 ounces.
Rose water.....14 ounces.

Mix the tinctures, and slowly add the rose water; filter at a low temperature.

Jockey Club.

Oil of bergamot..... 1½ drams.
Oil of lavender..... ½ dram.
Oil of rose.....15 minims.
Tincture of musc..... 1 ounce.
Tincture of orris root.... 8 ounces.
Tincture of vanillin..... 3 ounces.
Cologne spirits, 188 per ct. 8 ounces.
Rose water.....14 ounces.

Proceed as directed for Alpine Bouquet.

Lilac, White or Purple.

Oil of muguet (lilac)..... 1 dram.
Oil of kananga..... 1 dram.
Tincture of musc baur..... 1 ounce.
Tincture of orris..... 7 ounces.
Cologne spirits, 188 per ct...12 ounces.
Orange flower water..... 7 ounces.
Rose water..... 7 ounces.

Proceed as directed for Alpine bouquet.

If a purple lilac is needed, color with purple aniline, q. s.

Mary Stuart.

Otto of rose..... ½ dram.
Oil of sandalwood.....10 drops.
Oil of bergamot..... 1 dram.
Tincture of orris..... 8 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of civet..... 2 ounces.
Tincture of musc baur.... 2 ounces.
Cologne siprits, 188 per ct. 6 ounces.
Rose water.....14 ounces.

Proceed as directed for Alpine bouquet.

Moss Rose.

Otto of rose..... ½ dram.
Oil of rose geranium.....10 minims.

Tincture of musc baur.... 2 ounces.
Tincture of orris..... 6 ounces.
Cologne spirits.....12 ounces.
Rose water.....14 ounces.

Proceed as directed for Alpine bouquet.

Musk Rose.

Oil of rose..... ½ dram.
Oil of rose geranium.....10 minims.
Tincture of musc..... 1 ounce.
Tincture of ambrette..... 3 ounces.
Tincture of orris..... 2 ounces.
Cologne spirits.....14 ounces.
Rose water.....14 ounces.

Proceed as directed for Alpine bouquet.

Musk, Cheap.

Tincture of ambrette..... 8 ounces.
Oil of angelica root.....10 drops.
Tincture of civet..... 1 ounce.
Tincture of musc..... 2 ounces.
Cologne spirits, 188 per ct... 9 ounces.
Rose water.....14 ounces.

Dissolve the oil of angelica root in the cologne spirits; add the tinctures and shake well. Then add the water slowly and filter. Color with caramel.

Tea Rose.

Oil of rose.....15 minims.
Oil of rose geranium.....15 minims.
Oil of sandalwood.....10 minims.
Cologne spirits, 188 per ct..20 ounces.
Rose water..... 7 ounces.
Orange flower water..... 7 ounces.

Dissolve the oils in the cologne spirits; add the rose water and filter.

White Rose.

Oil of rose.....15 minims.
Oil of rose geranium.....10 minims.
Oil of patchouli..... 2 minims.
Tincture of ambrette..... 2 ounces.
Tincture of orris..... 4 ounces.
Cologne spirits, 188 per ct..12 ounces.
Rose water.....16 ounces.

Dissolve the oils in the cologne spirits; add the tinctures; shake well, then slowly add the rose water and filter. Color a pale green with aniline green or prepared chlorophyll.

Ylang Ylang.

Oil of kananga..... 2 drams.
Oil of rose geranium.....10 minims.
Oil of neroli petale..... 5 minims.
Tincture of musc..... 1 ounce.
Cologne spirits.....18 ounces.
Orange flower water..... 7 ounces.
Rose water..... 8 ounces.

Proceed as directed for Alpine bouquet.

TINCTURES FOR PERFUMERY

(Directions for Making.)

Tincture (or Washings) from Pomade.

Take any flower pomade... 6 pounds.
Cologne spirits, 188 per ct...14 pints.

Place eight pints of the cologne spirits in a 20 quart ice cream freezer. Melt the pomade gently by the heat of a water bath, and pour into the spirits contained in the freezer, turning the handle of the freezer slowly, and continue turning for an hour. Let the pomade stay in the spirits for three days, agitating occasionally (the oftener the better); pour off the tincture and set aside. Pour into the freezer (containing the pomade) the remaining six pints of cologne spirits, and let it remain on the pomade (with occasional agitation) for three days; carefully drain off the second washing and add to the first washing; label this tincture of rose, orange flowers or whatever the name may be; after the second washing is carefully

drained from the freezer, four more pints of spirits can be added to the pomade, and after maceration with occasional agitation, can be drained off and set aside for use in making floral waters, cheap extracts or cologne.

See also directions for washing pomade under the head of Handkerchief extracts, to prepare.

Tincture of Ambergris.

Ambergris ..... 1 ounce.
Cologne spirits, 188 per ct..128 ounces.

Cut the ambergris into small pieces, and digest in the spirits (with occasional agitation), for at least two weeks before using. Decant the clear portion as may be needed for use; press and filter the residue.

Tincture of Ambrette Seeds.

(Musk Seeds.)

Ambrette seed, ground..... 1 pound.
Cologne spirits, 188 per ct..128 ounces.

Macerate the seed in the spirits for at least two weeks before using; agitate occasionally.

Decant as needed for use; press and filter the residue.

Tincture of Angelica.

Oil of angelica (German).. 2 ounces.
Cologne spirits, 188 per ct.128 ounces.

Mix and filter if necessary.

Tincture of Benzoin.

Gum benzoin, powdered.... 2 pounds.
Cologne spirits.....128 ounces.

Macerate with occasional agitation for two weeks before using.

Tincture of Civet.

Civet ..... 2 ounces.
Orris root, powdered..... 2 ounces.
Cologne spirits.....128 ounces.

Macerate with occasional agitation for two weeks before using.

Tincture of Cloves.

Oil of cloves..... 2 ounces.
Cologne spirits, 188 per ct.128 ounces.

Mix and filter if necessary.

Tincture of Coumarin.

Coumarin ..... 2 ounces.
Cologne spirits.....128 ounces.

Dissolve the coumarin in the spirit and filter if necessary.

Tincture of Curcuma.

Curcuma, powdered..... 8 ounces.
Cologne spirits.....128 ounces.

Macerate the curcuma in the spirits for three days, and percolate.

Tincture of Heliotrope.

Heliotropin ..... 8 ounces.
Cologne spirits.....128 ounces.

Dissolve the heliotropin in the spirits and filter if necessary.

Tincture of Ionone.

Ionone ..... 1 ounce.
Cologne spirits, 188 per ct. 19 ounces.

Mix.

Tincture of Musk, Artificial.

Musc Artificial..... ½ ounce.
Cologne spirits, 188 per ct.128 ounces.

Dissolve and filter if necessary.

Tincture of Musk.

Grain musk..... 1 ounce.
Carbonate of potash..... ½ ounce.
Hot water..... 8 ounces.
Cologne spirits, 188 per ct.120 ounces.

Rub the grain musk and carbonate of potash in a mortar with the hot water; pour into a bottle; add the cologne spirits. Macerate for fourteen days (agitating occasionally), before using. The older the tincture, the better the quality; therefore do not filter until all the bright portion that can be decanted off is gone, then press the residue and filter. The marc may be washed with dilute spirit and the washing used in cheap goods. A careful perfumer, as well as a careful druggist, should always keep an eye open for economizing his by-products.

Tincture of Neroli Bigarade.

Oil of neroli bigarade..... 2 ounces.
Cologne spirits, 188 per ct.128 ounces.
Mix and filter if necessary.

Tincture of Neroli Petale.

Oil of neroli petale..... 2 ounces.
Cologne spirits, 188 per ct.128 ounces.
Mix and filter if necessary.

Tincture of Neroli Portugal.

Oil of neroli bigarade..... 1 ounce.
Oil of neroli petale..... 1 ounce.
Cologne spirits, 188 per ct.128 ounces.
Mix and filter if necessary.

Tincture of Nutmegs.

Oil of nutmegs..... 2 ounces.
Cologne spirits.....128 ounces.
Mix and filter.

Tincture of Orris (from Oil).

Oil of orris..... 1 ounce.
Cologne spirits, 188 per ct.128 ounces.
Mix and filter if necessary.

Tincture of Orris (from Orris Root).

Orris root, powdered..... 2 pounds.
Cologne spirits, 188 per ct.128 ounces.

Macerate the orris root for fourteen days (agitating occasionally), before using. When required for use, decant from the top, the bright portion; then press the residue and filter. The marc may be dried and used as a filler for sachet powders.

Tincture of Red Saunders.

Red saunders in coarse powder ..... 8 ounces.
Cologne spirits.....128 ounces.
Macerate the red saunders in the spirits for three days, and percolate.

Tincture of Rose Geranium.

Oil of rose geranium..... 2 ounces.
Cologne spirits.....128 ounces.
Mix and filter if necessary.

Tincture of Sandalwood.

Oil of sandalwood, East Indian ..... 2 ounces.
Cologne spirits, 188 per ct.128 ounces.
Mix and filter if necessary.

Tincture of Styrax.

Liquid styrax..... 8 ounces.
Cologne spirits, 188 per ct.128 ounces.
Macerate the styrax in the spirits, with occasional agitation, for a week; set aside until clear; decant off the clear portion as needed, and filter the residue.

Tincture of Tolu.

Balsam of tolu..... 12 ounces.
Cologne spirits, 188 per ct.128 ounces.
Dissolve the tolu in the spirits by maceration and agitation; set aside until clear; decant off the clear portion as needed, and filter the residue.

Tincture of Tonka.

Tonka beans, Angostura.... 1 pound.
Cologne spirits, 188 per ct.128 ounces.

Cut and bruise the beans with a portion of the spirits; add the remainder of the spirits and macerate for a month before using; decant the clear portion as needed; filter the residue.

Tincture of Tonka from Coumarin.

Coumarin ..... 1 ounce.
Cologne spirits, 188 per ct..64 ounces.
Water .....64 ounces.

Tincture of Vanilla (from the Bean).

Fine quality Mexican bean. 16 ounces.
Cologne spirits, 188 per ct.128 ounces.

Cut the beans into small pieces (lengthwise and across the bean), bruise well in a mortar with a small portion of spirits; put them into a two-gallon bottle with the remainder of the spirits; shake occasionally, and let stand for at least a month before using; when clear, decant from the top as may be needed; press and filter the residue. The pressed marc may be macerated in dilute alcohol and used for cheap vanilla flavoring extract.

Tincture of Vanillin.

Vanillin ..... 1 ounce.
Cologne spirits, 188 per ct.128 ounces.

Dissolve the vanillin in the spirits, and filter if necessary.

Tincture of Verbena.

Oil of verbena..... 2 ounces.
Cologne spirits, 188 per ct.128 ounces.

Mix and filter if necessary.

Tincture of Vetivert.

Oil of vetivert..... 2 ounces.
Cologne spirits, 188 per ct.128 ounces.

Mix and filter if necessary.

COLOGNE WATERS.

Windsor Cologne.

Cologne spirits, 188 per ct.64 ounces.
Oil of bergamot..... ½ ounce.
Oil of cloves..... 1¼ drams.
Oil of rose geranium..... 5 drams.
Oil of lavender, English... 5 drams.
Oil of sandalwood..... ½ dram.
Oil of patchouli..... ¼ dram.
Tincture of musc..... 4 ounces.
Tincture of benzoin..... 1 ounce.
Extract of violet..... 5 ounces.
Extract of white rose..... 4 ounces.
Rose water.....14 ounces.

Dissolve the oils in the spirits; add the tinctures and extracts. Mix well and let stand for 2 days, then slowly add the water, and in 14 days filter, using gray filtering paper and carbonate of magnesia.

Vermont Cologne.

Oil of lavender..... 2 drams.
Oil of bergamot..... 2 drams.
Oil of cloves..... 1 dram.
Oil of rose geranium..... ½ dram.
Oil of cinnamon..... 2 drops.
Tincture of musc..... 2 ounces.
Cologne spirits, 188 per ct.32 ounces.
Rose water.....16 ounces.

Mix and filter.

Lafayette Cologne.

Oil of bergamot..... 2 drams.
Oil of lemon..... 1 dram.
Oil of reseda geraniol.... ½ dram.
Oil of rose geraniol.....15 minims.
Oil of hyacinth geraniol...10 minims.
Tincture of vanilla..... 4 ounces.
Cologne spirits, 188 per ct.20 ounces.
Rose water..... 8 ounces.

Mix and filter.

Cologne, Extra Fine.

Cologne spirits, 188 per ct.128 ounces.
Oil of lavender flowers... ½ ounce.

Oil of lemon	1	ounce.
Oil of bergamot	1	ounce.
Oil of rosemary	¼	ounce.
Oil of cloves	½	dram.
Oil of neroli Portugal	1	dram.
Oil of rose geraniol	1	dram.
Tincture of musc	4	ounces.
Orange flower water	32	ounces.

Mix and filter.

Cologne Water, Fine.

Cologne spirits, 188 per ct.	128	ounces.
Oil of bergamot	¾	ounce.
Oil of lavender	½	ounce.
Oil of orange, sweet	1	ounce.
Oil of lemon grass	½	dram.
Orange flower water	64	ounces.

Mix and filter.

American Cologne.

Cologne spirits, 188 per ct.	24	ounces.
Oil of neroli Portugal	2	drams.
Oil of English lavender	3	drams.
Oil of rose geraniol	1	dram.
Oil of vetivert	½	dram.
Oil of sandalwood	1	dram.
Tincture of musc	8	ounces.
Orange flower water	8	ounces.

Mix and filter.

Cologne Mixture. A

(2 ounces of mixture make 4 pints of cologne water, by the addition of 48 ounces of spirits and 16 ounces of water.)

Oil of bergamot	16	ounces.
Oil of rosemary	8	ounces.
Oil of lavender (Eng.)	3	ounces.
Oil of lemon	6	ounces.
Oil of orange, sweet	6	ounces.
Oil of neroli Portugal	1	ounce.
Oil of cloves	½	ounce.
Cologne spirits, 188 per ct.	88	ounces.

Mix and filter if necessary.

Cologne Mixture. B

Oil of bergamot	10	ounces.
Oil of lemon	20	ounces.
Oil of orange	10	ounces.
Oil of rosemary	2	ounces.
Oil of neroli, big	1	ounce.
Oil of neroli, petale	4	ounces.
Oil of cedrat	1	ounce.
Oil of geraniol hyacinth	1	ounce.
Tincture of jasmine	32	ounces.
Tincture of musc	32	ounces.
Tincture of vanillin	8	ounces.
Tincture civet	8	ounces.

Mix and filter if necessary.

4 ounces of this mixture added to 96 ounces of cologne spirits, 188 per cent, and 32 ounces of water, will make a very fine eau de cologne.

Oil of Melisse.

Oil of bergamot	4	ounces.
Oil of lemon	4	ounces.
Oil of orange, sweet	4	ounces.
Oil of rose geraniol	1	ounce.
Oil of lemon grass	½	ounce.
Tincture of musk	3½	ounces.

Mix. One-half an ounce of this mixture to 22 ounces of cologne spirits, 188 per cent, and 10 ounces of water, will make Melisse water.

Cologne.

Oil of neroli	20	drops.
Oil of origanum	6	drops.
Oil of rosemary	20	drops.
Cologne spirits, 188 per ct.	20	ounces.
Orange flower water	4	ounces.

Mix.

Florida Water. A

Oil of lavender	1	ounce.
Oil of bergamot	1	ounce.
Oil of lemon	1	ounce.
Oil of orange	¼	ounce.
Oil of cloves	1	dram.

Oil of cassia..... 2 drams.
Cologne spirits, 188 per ct. 1½ gallons.
Rose water..... ½ gallon.
Mix and filter.

Florida Water. B

Oil of bergamot..... 1 ounce.
Oil of rosemary..... ¼ ounce.
Oil of lemon..... ¼ ounce.
Oil of cassia..... ⅛ ounce.
Oil of cloves.....15 minims.
Tincture of orris..... 8 ounces.
Tincture of styrax..... ½ ounce.
Cologne spirits, 188 per ct. 1 gallon.
Rose water..... ½ gallon.
Mix and filter.

Florida Water Mixture. A

Oil of lavender (French)...16 ounces.
Oil of bergamot.....16 ounces.
Oil of lemon.....16 ounces.
Oil of orange..... 4 ounces.
Oil of cloves..... 1 ounce.
Oil of cassia..... 2 ounces.
Cologne spirits, 188 per ct...73 ounces.
Mix and filter if necessary.

4 ounces of this mixture added to 96 ounces of cologne spirits, 188 per cent, and 32 ounces of water, will make Florida water.

Florida Water Mixture B

Oil of bergamot.....16 ounces.
Oil of rosemary..... 4 ounces.
Oil of lemon..... 4 ounces.
Oil of cassia..... 2 ounces.
Oil of cloves..... 2 drams.
Tincture of orris.....64 ounces.
Tincture of styrax..... 8 ounces.
Cologne spirits.....30 ounces.
Mix and filter if necessary.

4 ounces of this mixture added to 96 ounces of cologne spirits, 188 per cent, and 32 ounces of water, will make Florida water.

Lavender Water—Glenn's.

Oil of lavender, Mitcham.. 1 ounce.
Oil of bergamot..... ½ ounce.
Tincture of vanillin..... 1 ounce.
Tincture of coumarin..... ½ ounce.
Cologne spirits, 188 per ct.40 ounces.
Water .....10 ounces.

Dissolve the oils in the spirits; add the tinctures, and set aside for 3 days before adding the water. Add the latter slowly and let it stand 2 weeks before filtering.

Lavender Water—English.

Oil of lavender, Mitcham... 2 ounces.
Oil of bergamot..... 1 ounce.
Tincture of vanillin..... 4 ounces.
Tincture of angelica..... 4 ounces.
Cologne spirits, 188 per ct...88 ounces.
Rose water.....32 ounces.

Dissolve the oils in the spirits; add the tinctures, and set aside for 3 days before adding the rose water. Let it stand 2 weeks before filtering.

Lavender Water—Barclay's.

Oil of lavender, Mitcham. 1 ounce.
Oil of bergamot..... ½ ounce.
Oil of neroli petale.....15 minims.
Oil of rose geraniol.....15 minims.
Tincture of ambrette seed 4 ounces.
Tincture of angelica..... 1 ounce.
Cologne spirits, 188 per ct.84 ounces.
Rose water .....32 ounces.

Dissolve the oils in the spirits; add the tinctures, and set aside for 3 days before adding the rose water. Let it stand 2 weeks before filtering.

Lavender Water—Amber.

Oil of lavender..... 2½ ounces.
Oil of bergamot..... 5 drams.
Tincture of coumarin..... 4 ounces.
Tincture of vanillin..... 2 ounces.
Tincture of civet..... 1 ounce.

Tincture of rose	16	ounces.
Cologne spirits, 188 per ct.	74	ounces.
Rose water	32	ounces.

Color amber with red saunders, if preferred colored. Dissolve the oils in the spirits; add the tinctures; set aside ror 3 days before adding the rose water. Let it stand for 2 weeks before filtering. The four formulas for lavender water make very nice goods; the latter is the best.

Lilac Water.

Extract of lilac	16	ounces.
Cologne spirits, 188 per ct.	70	ounces.
Water	44	ounces.

Mix the extract of lilac with the cologne spirits, and add the water slowly. Filter.

Melisse Water.

Oil of melisse	2	ounces.
Cologne spirits	88	ounces.
Water	40	ounces.

Dissolve the oil in the spirit and add the water; filter.

Verbena Water.

Oil of lemon grass	¾	ounce.
Oil of bergamot	¼	ounce.
Oil of neroli petale	1	dram.
Oil of cloves	10	drops.
Oil of cinnamon	20	drops.
Cologne spirits, 188 per ct.	96	ounces.
Water	32	ounces.

Dissolve the oils in the spirit; add the water, and filter.

Violet Water.

(First Quality.)

Tincture of violet	32	ounces.
Tincture of cassie	16	ounces.
Tincture of rose	16	ounces.
Tincture of orris	32	ounces.
Tincture of vanillin	16	ounces.
Oil of bergamot	¼	ounce.
Oil of bitter almonds	5	drops.
Cologne spirits, 188 per ct.	88	ounces.
Rose water	40	ounces.
Ionone	1	ounce.

Dissolve the oils in the spirit; add the tinctures, and set aside for 3 days; then add the water slowly, stirring well, and let stand for 2 weeks before filtering. Color with Chlorophyll to the tint required.

Violet Water.

(Second Quality.)

Ionone	1	ounce.
Tincture of cassie	32	ounces.
Tincture of orris	64	ounces.
Tincture of vanillin	16	ounces.
Tincture of ambrette seed	8	ounces.
Oil of bitter almonds	5	drops.
Oil of bergamot	¼	ounce.
Cologne spirits	64	ounces.
Rose water	72	ounces.

Proceed as directed for formula A.

Violet Water.

(Third Quality.)

Ionone	½	ounce.
Tincture of orris	64	ounces.
Tincture of vanillin	16	ounces.
Oil of sandalwood	½	ounce.
Oil of bergamot	1	ounce.
Oil of rose geranium	½	ounce.
Cologne spirits, 188 per ct.	80	ounces.
Rose water	96	ounces.

Dissolve the oils in the spirit; add the tinctures, and set aside for 3 days; then add the water slowly, stirring well, and let stand for 2 weeks before filtering. Color with chlorophyll or aniline green to the tint required.

BAY RUMS, ETC.

Bay Rum Mixture.

Oil of bay	1	ounce.
Oil of white thyme	1	ounce.
Oil of allspice	1	ounce.

Oil of cloves..... ¼ ounce.
Cologne spirits, 188 per ct.. ¾ ounce.
Mix.

½ ounce of this, to one gallon of proof spirits for ordinary bay rum. An improved article may be made by doubling the quantity of the bay rum mixture used, and also by substituting 8 ounces of New England rum for 8 ounces of the proof spirits. Some compounders use 2 drams of salts of tartar to each gallon of bay rum. Many customers prefer it that way.

Bay Rum Mixture.

Oil of bay..... 1 ounce.
Oil of cloves..... 1 ounce.
Oil of red thyme..... 2 ounces.
Oil of allspice..... 2 ounces.
Mix. See directions on formula A.

Bay Rum Mixture.

Oil of bay..... 2 ounces.
Oil of allspice..... 1 ounce.
Oil of orange, sweet..... 1 ounce.
Oil of cloves..... ½ ounce.
Oil of geraniol hyacinth... ½ ounce.
Mix. See directions on formula A.

Bay Rum Mixture.

Oil of bay..... 2 ounces.
Oil of cloves..... ¼ ounce.
Oil of orange, sweet..... ½ ounce.
Oil of neroli petale..... 1 dram.
Oil of allspice..... 1 dram.
Oil of cardamom..... 5 drops.
Mix. See directions on formula A.

Vinegar Aromatic.

Cologne spirits, 188 per ct.16 ounces.
Oil of bergamot..... ½ dram.
Oil of lemon.....20 drops.
Oil of lavender, French...40 drops.
Oil of cloves.....15 drops.
Oil of rosemary.....10 drops.
Oil of cassia..... 5 drops.
Tincture of coumarin..... 8 ounces.
Tincture of orris..... 2 ounces.
Acetic ether..... 1¼ ounces.
Acetic acid, No. 8..... 3 ounces.
Water ..... 5½ ounces.

Dissolve the oils in the spirit; add the tinctures and acetic ether. Mix the acid and water and add, stirring constantly for 5 minutes. Filter.

Vinegar Rouge.

Cologne spirits, 188 per ct...16 ounces.
Carmine No. 40..... 3 drams.
Aqua ammonia, stronger.... 2 ounces.
Water ..... 3 pints.

Place the carmine in a large mortar and powder it; add the ammonia and rub well; then add the spirit and lastly the water. Let it stand one week before using.

SACHET POWDERS.

Pot-pourri. A

The whole of the solids are to be coarsely powdered, the liquids evenly sprinkled over the mixture, and then all well shaken together.

Orris root.....16 ounces.
Benzoin ..... 5 ounces.
Coriander ..... 4 ounces.
Cinnamon ..... 1 ounce.
Cloves ..... 1 ounce.
Pimento ..... 1 ounce.
Tonquin bean..... ½ ounce.
Ess. bouquet..... ½ ounce.

Pot-pourri. B

Vanillin ..... 1 ounce.
Orris root..... 1 ounce.
Cloves ..... 1 ounce.
Cinnamon bark..... 1 ounce.
Oil of lavender.....10 minims.
Oil of neroli.....10 minims.

Pot-pourri. C

Coriander	4	ounces.
Orris root	4	ounces.
Calamus	4	ounces.
Rose-petals	4	ounces.
Lavender flowers	2	ounces
Mace	½	ounce.
Cinnamon	½	ounce.
Cloves	2	drams.
Essence of musk	½	dram.
Common salt	2	ounces.

Pot-pourri. D

Rose petals	8	ounces.
Lavender flowers	4	ounces.
Orris root	2	ounces.
Vanilla	2	drams.
Cloves	2	drams.
Storax	½	ounce.
Siam benzoin	1	ounce.
Ambergris	20	grains.
Musk	4	grains.
Common salt	2	ounces.
Oil of lemon	1	dram.
Oil of vetivert	½	dram.

Pot-pourri. E

Lavender flowers	1	pound.
Rose petals	1	pound.
Orris root	1	pound.
Table salt	8	ounces.
Cloves	4	ounces.
Cinnamon	4	ounces.
Benzoin	4	ounces.
Pimento	4	ounces.
Vanilla	3	ounces.
Musk pod	1	ounce.
English oil of lavender	1	dram.
Oil of sandalwood	1	dram.
Oil of rose geranium	1	dram.
Oil of bergamot	2	drams.
Oil of lemon	2	drams.
Essence of ambergris	½	ounce.
Otto of rose	10	minims.

Grind all the solids to coarse powder, and with the mixture intimately incorporate the oils.

Pot-pourri. F

Vanilla	1	ounce.
Orris root	1	ounce.
Cloves	1	ounce.
Cinnamon	1	ounce.

Mix.

Pot-pourri. G

Violet Odor.

Black currant leaves	7	ounces.
Cinnamon	8	ounces.
Rose leaves	8	ounces.
Powdered orris root	18	ounces.
Powdered Benzoin	4	ounces.
Ess. oil of bitter almonds	3	drams.
Grain musk	1	dram.
Ionone	1	dram.

Mix.

Pot-pourri. H

Gum benzoin	2	ounces.
Orris root	1	ounce.
Cloves	1	ounce.
Storax	½	ounce.
Cinnamon	2	drams.

Grind together and add—

Grain musk	½	dram.
Coarse and dry salt	2	ounces.
Oil of lavender	20	minims.

Mix.

Pot-pourri. I

Cinnamon	½	ounce.
Cloves	½	ounce.
Mace	½	ounce.
Orris root	4	ounces.
Oil of lavender	40	minims.
Oil of lemon grass	40	minims.
Oil of lemon	40	minims.
Oil of bergamot	40	minims.

Mix.

Pot-pourri. J

Pimento	2	ounces.
Cinnamon	2	drams.

Essence of musk.....12 minims.
Essence of ambergris.....12 minims.
Oil of lavender.....12 minims.
Mix.

Lord Plymouth's Pot-pourri.

Benzoin, siamensis contus 8 ounces.
Pulv. rad. iridis..... 8 ounces.
Pulv. storacis..... 8 ounces.
Pulv. rad. angelicae..... 8 ounces.
Gran. moschi..... 1 scruple.
Fabae tonkae..... No. 4
Macis ..... ½ ounce.
Caryophyll ..... ½ ounce.
Cort. cinnam. contus..... ½ ounce.

Mix all these when they have been bruised or powdered, and add—

Ol. lavandul, ang..... 1 dram.
Otto rose..... 1 dram.
Flor. rosae..... 4 ounces.
Flor. lavandulae..... 4 ounces.
Again mix.

Sachets. A

The simplest way to make sachets extemporaneously is to take a sufficient quantity of a basis, and add to it liquid perfume in the proportion of a drachm to the ounce. The resulting compound is suited for ordinary retail sale, and if a more permanent article is desired, the ingredients of any perfume, minus spirit, may similarly be mixed with the basis. The following are suitable bases:

Bran ..... 7 ounces.
Powdered orris root..... 1 ounce.
Mix.

Sachets. B

Ground rice..... 4 ounces.
Powdered orris root..... 4 ounces.
Mix.

The latter may be colored with a few drops of a proof spirit solution of an aniline dye.

In compounding sachets the whole of the liquid ingredients should be mixed and triturated for five minutes with twelve times their bulk of orris root or other non-resinous basis. The resins, if any in the formula, should be separately mixed with a portion of the fibrous basis.

Acacia or Cassie.

Cassie flowers..... } equal parts
Powdered orris root..... } of each.
Grind the flowers and mix with the orris.

Bouquet de Caroline.

Powdered orris root..... 2 pounds.
Grain musk.....10 grains.
Oil of bergamot..... ½ ounce.
Oil of lemon..... ½ ounce.
Otto of rose..... ½ dram.
Mix.

Chypre.

Powdered orris root..... 1½ pounds.
Rasped cedarwood..... 1 pound.
Rasped sandalwood..... 1 pound.
Vanilla (ground)..... 4 ounces.
Tonka bean (ground)..... 2 ounces.
Essence of musk..... 1 ounce.
Oil of rose geranium..... ½ dram.
Otto of rose.....25 minims.
Oil of bergamot.....15 minims.
Mix.

Ess. Bouquet. A

Powdered orris root.....16 ounces.
Grain musk..... 1 dram.
Otto of rose..... 1 dram.
Oil of bergamot..... 3 drams.
Oil of lemon.....40 minims.
Mix.

Ess. Bouquet. B

Powdered orris root..... 2 pounds.
Powdered sandalwood.... 2 pounds.

Powd. orange peel (sweet)	2	pounds.
Artificial musk	1	grain.
Coumarin	2	grains.
Vanillin	2	grains.
Otto of rose	1½	drams.
Oil of bergamot	2	drams.
Oil of ylang ylang	20	minims.
Oil of neroli	20	minims.
Oil of rose geranium	15	minims.
Oil of cinnamon	5	minims.
Essential oil of almonds	5	minims.
Jasmine extract	2	ounces.

Mix.

Ess. Bouquet. C

Powdered orris root	4	pounds.
Ground cassie	1	pound.
Rose petals	1	pound.
Ground vanilla	3	ounces.
Oil of bergamot	1	ounce.
Oil of lemon	1	ounce.
Essence of musk	2	ounces.
Essence of ambergris	½	ounce.
Oil of rose geranium	1	dram.

Mix.

Frangipanni. A

Powdered orris root	16	ounces.
Powdered Tonka bean	4	ounces.
Musk	10	grains.
Civet	½	dram.
Otto of rose	10	minims.
Oil of sandalwood	10	minims.
Oil of neroli	10	minims.

Mix.

Frangipanni. B

Powdered orris root	16	ounces.
Powd. sweet orange peel	16	ounces.
Powdered sassafras	3	ounces.
Coumarin	1	grain.
Otto of rose	20	minims.
Oil of sandalwood	3	minims.
Oil of rose geranium	3	minims.
Essential oil of almonds	2	minims.
Essence of musk	1½	drams.
Essence of civet	1½	drams.
Jasmine extract	1½	ounces.

Mix.

Frangipanni. C

Powdered orris root	3	pounds.
Rasped sandalwood	4	ounces.
Ground vanilla	4	ounces.
Ground Tonka bean	2	ounces.
Oil of neroli	1	dram.
Oil of rose geranium	1	dram.
Oil of bergamot	1	dram.
Oil of sandalwood	40	minims.
Otto of rose	½	dram.
Oil of vetivert	10	minims.
Essence of musk	1	ounce.
Essence of civet	½	ounce.

Mix.

Heliotrope. A

Orris root, in coarse powd.	6	ounces.
Vanilla, in coarse powder	2	drams.
Musk	3	grains.
Otto of rose	1	minim.
Essential oil of almonds	1	minim.

Mix.

Heliotrope. B

Powdered orris root	16	ounces.
Powdered vanilla	4	ounces.
Powdered benzoin	1	ounce.
Musk	5	grains.
Civet	15	grains.
Essential oil of almonds	10	minims.
Otto of rose	10	minims.

Mix.

Heliotrope. C

Powdered orris root	8	ounces.
Coumarin	15	grains.
Vanillin	10	grains.
Musk	5	grains.
Essential oil of almonds	1	minim.
Otto of rose	1	minim.
Spirit	2	drams.

Mix.

Jockey Club. A

Powdered orris.....16 ounces.
Musk ..... 5 grains.
Otto of rose.....40 minims.
Oil of bergamot..... 1 dram.
Oil of sandalwood..... 1 dram.
Mix.

Jockey Club. B

Powdered orris root.....12 ounces.
Ground sandalwood..... 2 ounces.
Essence of musk..... ½ ounce.
Oil of bergamot..... 2 drams.
Essence of civet..... 2 drams.
Otto of rose..... 8 minims.
Mix.

Jockey Club. C

Sweet orange peel, dried and ground..... 2½ pounds.
Powdered orris root..... 1½ pounds.
Ground rose petals..... 1½ pounds.
Siam benzoin..... 4 ounces.
Ground sandalwood..... 2 ounces.
Cloves ..... 1 ounce.
Coumarin .....10 grains.
Musk ..... 1 grain.
Civet ..... 1 grain.
Otto of rose..... 1 dram.
Oil of bergamot..... 1½ drams.
Oil of rose geranium..... ½ dram.
Oil of neroli..... ½ dram.
Oil of cinnamon.....10 minims.
Oil of bitter almonds.....10 minims.
Oil of ylang ylang.....10 minims.
Jasmine extract..... 4 ounces.
Mix.

Lavender. A

Lavender flowers.....16 ounces.
Dried thyme..... 1 ounce.
Dried spearmint..... 1 ounce.
Powdered cloves..... ½ ounce.
Powdered caraway..... ½ ounce.
Oil of lavender..... 2 drams.
Mix.

Lavender. B

Ground lavender flowers..16 ounces.
Ground benzoin..... 1 ounce.
Oil of lavender..... ½ ounce.
Essence of musk..... ½ ounce.
Mix.

Lign Aloe.

Powdered orris root..... 3½ pounds.
Ground rose leaves..... 1 pound.
Ground sandalwood..... 8 ounces.
Ground vanilla..... 4 ounces.
Oil of lign aloe..... 1 ounce.
Essence of civet..... 1 ounce.
Essence of musk..... ½ ounce.
Oil of rose geranium.....40 minims.
Otto of rose.....20 minims.
Mix.

Marechale.

Powdered orris root..... 1 pound.
Ground sandalwood..... 8 ounces.
Ground rose petals..... 4 ounces.
Ground cloves..... 4 ounces.
Essence of musk..... 1 ounce.
Oil of bergamot..... 1 dram.
Oil of rose geranium..... 1 dram.
Oil of vetivert..... 1 dram.
Mix.

Millefleurs. A

Powdered orris root.....16 ounces.
Grain musk..... 5 grains.
Civet .....10 grains.
Otto of rose.....20 minims.
Oil of neroli.....20 minims.
Oil of cloves..... ½ dram.
Oil of bergamot..... 1 dram.
Mix.

Millefleurs. B

Powdered orris root..... 2 pounds.
Ground lavender flowers. 1 pound.
Ground cassie flowers.... 1 pound.
Ground rose flowers..... 1 pound.

Ground sandalwood..... 8 ounces.
Ground Tonka beans..... 4 ounces.
Ground benzoin..... 4 ounces.
Ground vanilla..... 3 ounces.
Ground cinnamon..... 2 ounces.
Ground cloves..... 2 ounces.
Essence of musk..... ½ ounce.
Essence of civet..... ½ ounce.
Oil of bergamot..... ½ ounce.
Oil of rose geranium..... ½ dram.
Oil of patchouli.....10 minims.
Mix.

Mousselaine.

Powdered orris root..... 2 pounds.
Ground rose flowers..... 8 ounces.
Ground cassie flowers..... 8 ounces.
Ground sandalwood..... 8 ounces.
Ground benzoin..... 2 ounces.
Essence of musk..... 2 ounces.
Oil of vetivert..... 1 dram.
Oil of rose geranium.....35 minims.
Oil of neroli..... 5 minims.
Mix.

Musk. A

Powdered orris root..... 2½ pounds.
Grain musk..... ½ dram.
Otto of rose..... 1 dram.
Mix.

Musk. B

Rice flour.....12 ounces.
Artificial musk.....10 grains.
Stain the flour with a few drops of solution of aniline yellow, and triturate the musk intimately with it.

New mown Hay. A

Bouquet de Caroline sachet. 8 ounces.
Verbena sachet (No. 1)..... 4 ounces.
Violet (No. 1)..... 4 ounces.
Mix.

New-Mown Hay.

Powdered orris root..... 2 pounds.
Ground Tonka beans..... 4 ounces.
Ground vanilla..... 2 ounces.
Essence of musk..... 6 drams.
Oil of rose geranium..... 1 dram.
Oil of bergamot..... ½ dram.
Otto of rose.....15 minims.
Oil of almonds..... 5 minims.
Mix.

Opoponax.

Powdered orris root..... 3 pounds.
Ground rose petals..... 1 pound.
Ground cassie petals..... 1 pound.
Ground Tonka beans..... 4 ounces.
Ground vanilla..... 3 ounces.
Ground musk-pods (or essence of musk)..... 1 ounce.
Essence of civet..... ½ ounce.
Oil of bergamot..... 2 drams.
Oil of rose geranium..... 1 dram.
Oil of citron..... ½ dram.
Oil of patchouli..... ½ dram.
Oil of citronella.....15 minims.
Otto of rose..... 5 minims.
Mix.

Patchouli.

Powdered orris root.....16 ounces.
Powdered patchouli leaves 8 ounces.
Otto of rose (or oil of rose geranium) ..... ½ dram.
Oil of patchouli..... 1 dram.
Mix.

Rondeletia.

Powdered orris root..... 3 pounds.
Ground lavender flowers.. 1½ pounds.
Ground cloves..... ½ ounce.
Essence of musk..... 1 ounce.
Essence of ambergris..... 1 ounce.
Oil of bergamot..... 2 drams.
Oil of English lavender... 2 drams.
Oil of cloves..... 2 drams.
Oil of rose geranium..... ½ dram.
Otto of rose.....20 minims.
Mix.

Rose Geranium.

Powdered orris root..... 2 pounds.
Oil of rose geranium..... ½ ounce.
Otto of rose.....10 minims.
Essence of musk..... ½ dram.
Mix.

Rose.

Ground rose petals..... 1½ pounds.
Powdered orris root..... 8 ounces.
Ground sandalwood..... 4 ounces.
Powdered patchouli leaves 2 ounces.
Essence of civet..... ½ ounce.
Oil of rose geranium..... ½ dram.
Otto of rose.....20 minims.
Mix.

White Rose.

Powdered orris root.....16 ounces.
Rice flour..... 8 ounces.
Otto of rose..... 2 drams.
Oil of patchouli.....15 minims.
Mix.

Red Rose.

Powdered orris root.....16 ounces.
Rasped sandalwood..... 8 ounces.
Rasped cedarwood..... 8 ounces.
Musk ..... 5 grains.
Otto of rose..... 1 dram.
Color the orris powder with solution of carmine before mixing with the other ingredients.

Sweet Briar.

Powdered orris root..... 4 pounds.
Ground sandalwood..... 1 pound.
Essence of ambergris..... 1 ounce.
Essence of musk..... ½ ounce.
Oil of lemon..... 1 dram.
Oil of lemongrass..... 1 dram.
Oil of neroli..... 1 dram.
Oil of bergamot.....40 minims.
Oil of rose geranium..... ½ dram.
Otto of rose..... ½ dram.
Mix.

Verbena. A
(1)

Powdered orris root..... 2 pounds.
Civet .....10 grains.
Oil of lemon grass..... 1 dram.
Otto of rose.....20 minims.
Mix.

Verbena. B
(2)

Powdered orris root..... 3 pounds.
Essence of musk..... ½ ounce.
Oil of lemon grass..... 3 drams.
Oil of bergamot..... 2 drams.
Oil of rose geranium..... ½ dram.
Mix.

Violet.
(1)

Powdered orris root..... 2 pounds.
Powdered benzoin..... 4 ounces.
Cassie extract..... 1 ounce.
Otto of rose.....10 minims.
Essential oil of almonds....10 minims.
Ionone .....¼ ounce.

Violet.
(2)

Powdered orris root..... 3 pounds.
Essence of musk..... 1 ounce.
Oil of bergamot..... ½ dram.
Essential oil of almonds..20 minims.
Otto of rose.....20 minims.
Ionone ..... ¼ ounce.

West End.

Powdered orris root..... 1 pound.
Grain musk.....10 grains.
Civet .....20 grains.
Otto of rose.....20 minims.
Oil of bergamot.....40 minims.
Mix.

Ylang-Ylang. A
(1)

Powdered orris..... 1 pound.
Powdered benzoin..... ½ ounce.

Civet	5	grains.
Oil of ylang ylang	20	minims.
Essential oil bitter almonds	3	minims.

Mix.

Ylang-Ylang. B

(2)

Powdered orris root	3	pounds.
Ground cassie flowers	1	pound.
Rose flowers	1	pound.
Ground pimento	4	ounces.
Ground Tonka bean	2	ounces.
Ground vanilla	2	ounces.
Ground benzoin	1	ounce.
Essence of musk	1	ounce.
Essence of civet	½	ounce.
Oil of bergamot	2	drams.
Oil of ylang ylang	2	drams.
Oil of pimento	1	dram.
Oil of rose geranium	1	dram.
Otto of rose	20	minims.

Mix.

FUMIGATING PERFUMES.

These are used for quickly putting down bad odors in sick rooms and other apartments. As a rule they are not very nice, being rather balsamic than flowery; still, they are decidedly antiseptic, and fulfil their purpose admirably.

Paper. A

Select good white blotting paper, and cut each demy sheet lengthways into three equal pieces. Make a solution of 1 ounce of potassium nitrate in 12 ounces of boiling water; place this solution in a large plate, and draw each strip of paper over the solution so as to saturate it. Then dry by hanging up.

The dried paper is to be saturated in a similar manner with either of the following solutions:

(1)

Siam benzoin	1	ounce.
Storax	3	drams.
Olibanum	2	scruples.
Mastic	2	scruples.
Cascarilla	2	drams.
Vanilla	1	dram.
Rectified spirit	8	ounces.

Bruise the solids and macerate in the spirit five days, filter, and add—

Oil of cinnamon	8	minims.
Oil of cloves	8	minims.
Oil of bergamot	5	minims.
Oil of neroli	5	minims.

Mix.

Paper. B

(2)

Benzoin	1½	ounces.
Sandalwood	1	ounce.
Spirit	8	ounces.

Macerate as No. 1, and add

Essence of vetivert	3	drams.
Oil of lemon grass	40	minims.

Mix.

After the paper is dry, cut it up into suitable sized pieces to go into a commercial envelope.

Ribbon.

Take ½-inch cotton tape and saturate it with nitre in the same manner as the paper above described; when dry saturate with the following tincture:

Benzoin	1	ounce.
Orris root	1	ounce.
Myrrh	2	drams.
Tolu balsam	2	drams.
Musk	10	grains.
Rectified spirit	10	ounces.

Macerate for a week, filter, and add 10 minims of otto of rose.

Another good formula, which may also be used for fumigating paper, is—

Olibanum	2	ounces.
Storax	1	ounce.
Benzoin	6	drams.

Peruvian balsam..... ½ ounce.
Tolu balsam..... 3 drams.
Rectified spirit.....10 ounces.
Macerate ten days, and filter.

Pastilles. A

(1)

Vegetable charcoal..... 6 ounces.
Benzoin ..... 1 ounce.
Nitrate of potash..... ½ ounce.
Tolu balsam..... 2 drams.
Sandalwood ..... 2 drams.
Mucilage of tragacanth... q. s.

Reduce the solids to fine powder, mix, and make into a stiff paste with the mucilage. Divide this into cones 25 grains in weight, and dry with a gentle heat.

Pastilles. B

(2)

Powdered willow charcoal. 8 ounces.
Benzoic acid..... 6 ounces.
Nitrate of potash..... 6 drams.
Oil of thyme..... ½ dram.
Oil of sandalwood..... ½ dram.
Oil of caraway..... ½ dram.
Oil of cloves..... ½ dram.
Oil of lavender..... ½ dram.
Oil of rose..... ½ dram.
Rose water.....10 ounces

Proceed as in No. 1, but this recipe is much the better of the addition of 20 grains of powdered tragacanth.

These are nice recipes, the first being from the French Codex, and the second is said to give a product closely resembling Piesse & Lubins pastilles.

TOILET POWDERS, ENAMELS, CREAMS, ETC.

Face and Complexion Powder. A

Zinc oxide..... 3 pounds.
Precipitated chalk..... 4 pounds.
French chalk.....10 pounds.
Magnesia carbonate, light. 1½ pounds.
Perfume with—
Oil of rose..... 1 dram.
Tincture of rose geranium ½ ounce.
Tincture of musc..... ½ ounce.

Dissolve the oil in the tinctures and spray the powder with the solution; mix well, and run through a sifter twice.

For pink powder color with carmine.

For yellow powder color with fine yellow ochre.

Face Powder. B

Oxide of zinc..... 3 pounds.
French chalk..... 7 pounds.
Perfume with—
Rose geraniol..... 1 dram.
Tincture of rose..... ¼ ounce.
Tincture of musc..... ½ ounce.
Proceed as directed for formula A.

Violet Powder.

Powdered starch.....10 pounds.
Powdered orris root..... 5 pounds.
Tincture of violet..... 1 ounce.
Tincture of vanillin..... ½ ounce.
Tincture of musc..... ¼ ounce.

Mix the starch and orris root; spray the powder with the perfume and run through a sifter and mixed twice.

Rose Powder.

Powdered starch.....10 pounds.
Powdered orris root..... 5 pounds.
Perfume with—
Oil of rose geraniol.....10 drops.
Tincture of rose..... 1 ounce.
Tincture of vanillin..... ½ ounce.
Tincture of musc..... ⅛ ounce.

Mix the starch and orris; dissolve the oil in the tinctures and spray the powder; run through a sifter and mixer twice.

Invisible Face Powder.

Bismuth subcarb..... 1 pound.
Magnesia carbonate..... 1 pound.

French chalk.....10 pounds.
Perfume the same as rose powder formula.

Phantom Face Powder.

Precipitated chalk..... 5 pounds.
French chalk.....10 pounds.
Carbonate of magnesia.... 3 pounds.
Oxy-chloride of bismuth.. 3 pounds.
Perfume with—
Oil of rose geraniol.....15 drops.
Tincture of rose..... 1 ounce.
Tincture of vanillin..... ½ ounce.
Tincture of musc..... ¼ ounce.
Dissolve the oil in the tinctures and spray the powder; mix well and run through a sifter and mixer twice.

Borated Talcum.

Powd. French Chalk purified .....10 pounds.
Powd. boric acid..... 8 ounces.
Perfume with—
Tincture of violet..... 1 ounce.
Tincture of jasmine..... ½ ounce.
Tincture of vanillin..... ½ ounce.
Mix the talcum and boric acid; spray with the tinctures and run through a sifter and mixer twice.

Infant Powder.

Powdered starch..... 4 pounds.
Powdered French chalk... 4 pounds.
Powdered boric acid..... ½ pound.
Powdered orris root..... 1½ pounds.
Oil of wintergreen..... ½ ounce.
Mix and run through sifter and mixer.

Oriental Rouge.

French chalk, powdered....10 pounds.
Carmine, No. 40..... 3 ounces.
Aqua ammonia, q. s., to dissolve the carmine.
Mix well and run through sifter and mixer.

Cream of Roses.

Oxide of zinc, pure..... 2½ pounds.
Glycerine ..... 24 ounces.
Filtered water.....128 ounces.
Carmine solution..... q. s.
Cologne spirits dilute... 64 ounces.
Extract of white rose.... 4 ounces.
Mix.
Use about 6 drams of the carmine solution to give the mixture a natural tint.

Balm of Roses.

Oxychloride of bismuth.. 2½ pounds.
Glycerine ..... 24 ounces.
Filtered water.....160 ounces.
Carmine solution..... q. s.
Cologne spirit, 188 per ct. 2 pints
Extract of white rose... 4 ounces.
Mix.
Use about 6 drams of the carmine solution to give the mixture a natural tint.
Should a rose-colored preparation be needed use carmine solution q. s. for the required tint.

Frostilline Cream.

Gum tragacanth ..... 3 ounces.
Hot water ..... 144 ounces.
Chlorate of potash..... 6 ounces.
Glycerine .. .. 48 fl. ounces.
Oil of rosemary..... ½ dram.
Oil of cassia..... 10 drops.
Oil of rose geranium.... 5 drops.
Oenanthic ether..... 5 drops.
Cologne spirits 188 per cent ..... 3 ounces.
Mix.

Witch Hazel Cream. A

Gum tragacanth..... 3 ounces.
Boric acid ..... 6 ounces.
Dist. ext. of witch hazel.. 144 ounces.
Tincture of rose..... 2 ounces.
Tincture of violet..... 1 ounce.
Glycerine ..... 3 pints.
Mix.

Witch Hazel Cream. B

Quince seed..... 4 ounces.
Hot water ..... 16 ounces.
Glycerine ..... 32 fl. ounces.
Dist. ext. of witch hazel..128 ounces.
Boric acid ..... 6 ounces.
Tincture of rose..... 2 ounces.
Tincture of violet..... 1 ounce.

Macerate the quince seed in the hot water; add the glycerine and witch hazel in which the acid has been previously dissolved; let stand for two days, stirring occasionally; strain and add the perfume.

Cold Cream, Glenn's.

White vaseline..... 16 ounces.
Beef suet, purified..... 4 ounces.
White wax..... 4 ounces.
Spermaceti ..... 4 ounces.

Melt together and when cool perfume with

Oil of rose ..... 1 dram.
Oil of rose geranium..... 1 dram.
Oil of sandalwood..... ½ dram.

Boro-glyceride Lanolin.

Boric acid ..... 5 drams.
Glycerine ..... 2½ ounces.
Distilled water..... 1½ ounces.

Dissolve by the aid of heat and add

Anhydrous lanoline..... 11 ounces.
Olive oil ..... 4 ounces.

Mix well.

This is put up in collapsible tubes; perfume to taste.

Camphor Cream.

White petrolatum..... 3½ pounds.
Beef suet ..... 1 pound.
White wax ..... 1½ pounds.
Spermaceti ..... ½ pound.
Camphor ..... 1 pound.

Melt and pour into moulds.

Camphor Ice. A

White petrolatum..... 2 pounds.
White wax, pure..... 2 pounds.
Gum camphor ..... 4 ounces.
White rosin..... 4 ounces.
Glycerine .....16 fl. ounces.

Melt and stir well; when nearly cool pour into moulds.

Camphor Ice. B

White petrolatum..... 2 pounds.
Paraffin wax, hard..... 2 pounds.
Gum camphor ..... 4 ounces.
White rosin ..... 4 ounces.
Glycerin .....16 fl. ounces.

Melt, and stir well; when nearly cool pour into moulds.

Lime Juice and Glycerine. A

Borax ..... ½ ounce.
Boiling water to dissolve borax ..... 10 ounces.

When cold add—

Oil of sweet almonds..... 20 ounces.
Oil of lemon..... ½ ounce.

Lime Juice and Glycerine. B

Carbonate of potash..... ½ ounce.
Hot water ..... 10 ounces.
Olive oil ..... 20 ounces.
Stronger water of ammonia ½ ounce.
Oil of lemon ..... ½ ounce.

Dissolve the carbonate of potash in the water; add the oil gradually, shaking after each addition. Then add the oil of lemon and lastly, the water of ammonia.

Freckle Cream.

Red iodide of mercury... 40 grains.
Oleate of zinc, powdered. 1¼ ounces.
Lanoline ..... 15 ounces.
White petrolatum oil..... 5 ounces.
Glycerin ..... 2 ounces.
Extract of white rose.... ½ ounce.

M. S. A.

Remedy for Removing Freckles.

From the Scientific American Encyclopedia.

A Good Remedy for Removing Freckles.—Sulphocarbolate of zinc, 1 ounce; glycerine, 12 ounces; rose water, 12 ounces; alcohol, 3 ounces; spirits of neroli, ½ dram. Mix them To be applied twice a day, leaving it on for half an hour to one hour.

The following is recommended by the Druggists' Circular as a preparation for this purpose which does not contain mercury: Ammonium chloride, 1 dram; distilled water, 7 ounces; cologne water, 2 drams.

Remedy for Freckles.

1. The following is quoted by New Remedies from a German medical journal: Sulphocarbolate of zinc, 2 parts; glycerine, 25 parts; rose water, 25 parts; spirits, 5 parts. Dissolve and mix.

The freckled skin is to be anointed with this twice daily, and allowed to stay on from one-half to one hour, and then washed off with cold water. Anæmic persons should also take a mild ferruginous tonic. In the sunlight a dark veil should be worn.

2. Scrape horseradish into a cup of cold sour milk, let stand twelve hours, strain, and apply two or three times a day.

Hydrokinone Wash for the Skin.

Hydrokinone	48 grains.
Acid phosphoric glac.....	30 grains.
Glycerine	2 drams.
Aqua dest	6 ounces.

Misce.

These two lotions are stated to give excellent results, especially the latter. They are to be applied to the skin of the face, etc., in the usual way at least twice in the course of twenty-four hours, after it has been washed and dried carefully. If the skin be of that nature known as "greasy," a preliminary wash with tepid water containing a few drops of sal volatile or liq. ammon. fort. is advisable.

Anti-Freckle Lotion.

Hydrarg. bichlor.....	12 grains.
Acid hydrochlor, pure....	3 drams.
Fruct. amygd. amar.....	1½ ounces.
Glycerina, Price's.....	1 ounce.
Tinct. benzoin	2 drams.
Aqua flor. aurant.....	q. s.

Dissolve the corrosive sublimate in 3 ounces of the orange flower water, add the hydrochloric acid, and set aside. Blanch the bitter almonds, and bruise them in a Wedgwood mortar, adding thereto the glycerine and using the pestle vigorously; a smooth paste is thus obtained. Then add gradually about 9 ounces of the orange flower water, stirring constantly, continuing this operation until a fine, creamy emulsion is the result. Subject this to violent agitation—preferably with the aid of a mechanical egg whisk—and allow the tincture of benzoin to fall into it the while drop by drop. Then add the mercurial solution, filter, and make up the whole to the measure of 1 imperial pint, with more orange flower water.

This preparation is recommended to us by an eminent dermatologist as being invariably efficacious in the treatment of ephelis, and always greatly ameliorating lentigo, even if it does not entirely decolorize the patches in the latter case. A general whitening of the skin is produced by this lotion without any irritation. It is as well, however not to apply it to any abraded surfaces. It has been found far superior in practice to a preparation—which it somewhat resembles—sold at a high price in Paris under the name of Lait Antiphelique.

Bismuth Ointment for Freckles.

Bismuthi subnit..... 3 drams.
Ung. simp ..... 2 ounces.
Fiat ung.

Apply to the face, etc., at night and remove in the morning with a little cold cream previous to washing.

Copper Oleate for Freckles, Etc.

This is a much more effective and reliable ointment for the purpose than the preceding, which is really only suited for the milder form of sunburn, while the oleate of copper will remove the more persistent and obstinate lentigo. It is thus prepared:

Cupri oleas, ver..... 1 ounce.
Petrogell. alb. Burgoyne's.. 3 ounces.
Incorporate thoroughly without heat.

This is to be applied in the same manner as the preceding, washing the surface of the skin, however after the cold cream), about every third morning with a little weak ammonia water in order to prevent any inadvertent accumulation of copper.

Cosmetic Gloves.

Mock kid or lamb-skin gloves rubbed over, on the inside, with a composition of the following kind: Spermaceti cerate (hardest, melted), 5 ounces; balsam of Peru, 1 dram; stir for five minutes, pour off the clear portion. add of oil of nutmeg, ½ dram; oil of cassia, 12 to 15 drops; essence of ambergris. 12 to 15 drops; and stir the whole until cold. Worn by ladies in bed, at night, to soften and blanch the hands, and to prevent and cure chaps and chilblains.

Solidified Glycerine for Toilet Use.

Transparent soap, 1½ ounces; water, 6 ounces; inodorous glycerine, 36 ounces. Dissolve the soap in the water by heat, add an equal weight of glycerine. When dissolved, add the rest of the glycerine, water q. s to make up the weight. When nearly cold add any perfume desired. Put in glass jars. It is of a pale amber color, and is transparent.

LOTIONS.

These preparations, popularly called "washes," are local external applications consisting of water, or some simple aqueous vehicle, holding in solution medicinal or cosmetic substances. Medicinal lotions are usually applied by wetting a piece of linen with them, and keeping it on the part affected; cosmetic lotions, by simply moistening the skin with them.

Acetic Lotion.

Acetic Lotion.—Take of good strong vinegar, 1 part; water, 2 or 3 parts; mix. In bruises, contusions, sprains, etc., and as a general refrigerant wash or lotion to sound parts; also to remove freckles.

Lotion of Acetate of Lead.

Lotion of Acetate of Lead.—Take of sugar of lead, ¼ ounce; distilled or soft water, 1 pint; dissolve. Sometimes a little vinegar is added, a like quantity of water being omitted. Used in excoriations, burns, sprains, contusions, etc.; also as an occasional cosmetic wash by persons troubled with eruptions.

Acetic Acid Lotion for Baldness.

Lotion of Acetic Acid for Baldness.—The following lotion is superior for a shampooing liquid, for removing dandruff, and as a useful and pleasant application for baldness. It is, of

course, moderately stimulating, and in those cases in which the hair follicles are not destroyed, but have become merely inactive, it is likely to prove efficacious. Take of acetic acid, 1 dram; cologne water, 1 ounce; water, to make in all 6 ounces.

Alum Lotion.

Alum Lotion.—Take of alum (crushed), 1¼ drams; distilled or soft water, 1 pint; dissolve. A little rose water may be introduced to scent it.

Arsenical Cosmetic Lotion. A

Arsenical Cosmetic Lotion.—1. Take of arsenious acid (solid or crystalized), 3 to 5 grains; crush it to a fine powder, place it in a jug or basin; pour on it of distilled or soft water (boiling), ¾ pint; and promote solution by constantly stirring the liquid for some time with a small glass rod or a clean piece of wood. After repose, and when cold, pour on the clear solution into a clean bottle, carefully observing not to disturb the sediment or any undissolved portion, which must be entirely rejected. To the clear liquid add, of eau de rose (foreign), 1 ounce; glycerine (Price's), 1 ounce; and after mixture, by agitation, further add enough cold distilled water or pure soft water to make the whole measure exactly one pint. It should then be poured into 5-ounce or 6-ounce bottles, only one of which, for safety, should be kept out for use.

Arsenical Cosmetic Lotion. B

2. As the last, but adding, with the arsenious acid, an equal weight of carbonate of potassium. This addition facilitates the solution of the former, but the product is said to be slightly less effective as a cosmetic wash.

Arsenical Cosmetic Lotion. C

3. Solution of arsenite of potassa, 1 fl. ounce; eau de rose, 1 fl. ounce; glycerine (Price's), ½ ounce; distilled or pure soft water (cold), 1 pint; mix. A convenient formula, but less esteemed than No. 1.

Bichloride of Mercury Lotion.

Lotion of Bichloride of Mercury.—Corrosive sublimate (in coarse powder), 10 grains; distilled water, 1 pint; agitate them together until solution is complete. The addition of 5 or 6 grains of pure sal ammoniac or 5 or 6 drops (not more) of hydrochloric acid, increases the solvent action of the water, and renders the preparation less liable to suffer change, but it is not otherwise advantageous. When absolutely pure distilled water is not used, this addition of acid should be made to prevent decomposition. Some persons dissolve the sublimate in 2 or 3 fluid drams of rectified spirit before adding the water, to facilitate the process; but this, also, though convenient, is unnecessary. This is a deadly poison.

Borax Lotion. A

..Lotion of Borax.—1. Borax (powdered), 2½ drams; distilled water, ½ pint. Mix. An effective wash for sore gums, sore nipples, excoriations, etc.; applied twice or three times daily, or oftener.

Borax Lotion. B

2. Borax (powdered), 3 drams; glycerine, ¾ ounce; rose water or elder flower water, 12 ounces. Mix.

Cherry Laurel Lotion.

Cherry Laurel Lotion, Cherry Laurel Shaving Wash.—Cherry laurel water

(genuine, distilled, 2 fluid ounces; rectified spirits, 1 fluid ounce; glycerine, ½ ounce; distilled water, 7½ fluid ounces. Mix. Used to allay irritation of the skin, particularly after shaving, the part being moistened with it by means of the tips of the fingers; also used as a wash for freckles and acne, and to remove excessive moistness or greasiness of the hair.

Lotion of Chlorate of Potassium.—Take of chlorate of potassium (powdered), ½ ounce; distilled water, ½ pint; rose water, 4 ounces; glycerine, 1 ounce. Dissolve.

Face Lotion.

Face Lotion.—As a face lotion, oatmeal made into a paste with glycerine, 2 parts; water, 1 part, and applied to the face at night, with a mask worn over, will give in a short time, if faithfully pursued, a youthful appearance to the skin.

Lotion to Remove Freckles.

Freckles, Lotion to Remove.—Alum and lemon juice, of each, 1 ounce; rose water, 1 pint. Bathe the face three or four times daily.

Glycerine Lotion. A

Glycerine Lotion. — 1. Glycerine (pure), 1 ounce; distilled or pure soft water, 19 ounces. Mix. A good strength for daily use as a cosmetic wash, or as a vehicle for other ingredients, for which purpose it is greatly preferable to milk or almonds; also as a lotion to allay itching and irritation of the skin, prevent chaps, excoriation, the effects of weather, climate, etc. It is likewise applied to the hair instead of oil.

Glycerine Lotion. B

2. Glycerine, 1 ounce; distilled water, 9 ounces. Mix. A proper strength when more marked effects are desired; as in chapped hands, lips, nipples, obstinate excoriations, abrasions, chafings, sunburns, persistent roughness or hardness of the skin, etc.

Emollient Glycerine Lotion.

Lotion, Emollient Glycerine.—Take of mucilage of quince seeds, 6 fluid ounces; glycerine, 1 fluid ounce; orange flower water, 1 fluid ounce. Make a lotion.

Gowland's Lotion.

Gowland's Lotion.—Jordan almonds (blanched), 1 ounce; bitter almonds (do.: say 7 to 9), 2 to 3 drams; distilled water, ½ pint; form them into an emulsion. To the strained emulsion, with agitation, gradually add of bichloride of mercury (in coarse powder), 15 grains, previously dissolved in distilled water, ½ pint; after which further add enough distilled water (2 or 3 teaspoonfuls) to make the whole measure exactly 1 pint.

Horse Radish Lotion.

Horse Radish Lotion (for the skin).—Horse radish root, 1½ ounces; boiling water, 1½ pints; borax, 3 drams. Used for freckles, tan, etc.

Lotion of Iodide of Potassium.

Lotion of Iodide of Potassium.—Iodide of potassium, 1 to 2 drams; distilled water, 1 pint; dissolve.

Glycerine Lotion.

Glycerine Lotion for Irritation of the Skin.—Mix 1½ ounces glycerine with 1½ pints water. Allays itching, removes dryness, etc. For chapped hands or lips, add 3 or 4½ drams borax.

Lemon Juice Solution.

Lemon Juice Solution.—Fresh lemon juice, 2 ounces; glycerine, 1 ounce; rose water or rain water, with 3 or 4 drops otto of roses added, 1 pint. Anoint the hands and face 3 or 4 times daily, and allow to remain on several minutes before wiping. For clearing the complexion, and making the skin white and soft.

Mosquito Lotion.

Mosquito Lotion.—Aqua ammonia, 2 ounces; glycerine, 1 ounce; rose water, 8 ounces.

Sulphureted Lotion. A

Sulphureted Lotion.—1. Sulphuret of potassium, 1 dram; distilled water, 1 pint; dissolve. Used to render the skin soft, white and smooth, particularly when there is a tendency to slight eruptions of a pustular or vesicular character. One-half to 1 ounce glycerine improves it for present use.

Sulphureted Lotion. B

2. Sulphide of potassium, 1½ drams; water, ½ pint; dissolve. A cleanly and effective remedy for itch, used twice or thrice daily. It does not soil the linen and leaves very little smell.

Sulphureted Lotion. C

3. (Cazenave.) Sulphuret of potassium, 1 dram; white soft soap, 2 drams; water, 8 ounces; dissolve. Used as the last; also to destroy pediculi.

Sunburn Lotion. A

Sunburn Lotion.—1. Two drams tincture of benzoin and 2 ounces rose water. Mix and shake well. This is an excellent recipe for sunburns.

Sunburn Lotion. B

Acid citric	1 dram.
Ferri sulphas pur	18 grains.
Camphora	q. s.
Aq. flor. sambu	3 ounces.

The sulphate of iron must be in clear green crystals, unless the granulated form, which is preferable, be available, and in either case the salt should be fresh and free from oxidized portions, or "rustiness;" it should be dissolved in half the elder flower water (all of which is better, if not quite recently distilled, for being quickly raised to the boiling point and cooled out of contact of air before use), the citric acid being also in solution in the other half, and the two fluids mixed, filtered, if necessary, and bottled immediately; a lump of camphor about the size of a small peppercorn to be added to the contents of each bottle.

Milk of Roses. A

English Milk of Roses.—1. Almonds (blanched), 1½ ounces; oil of almonds, 1½ ounces; white soft soap, 1 dram; rose water, ¾ pint; make an emulsion; to the strained emulsion add a mixture of essence or spirit of roses, ½ fluid dram; rectified spirit, 2½ fluid ounces; and, subsequently, of rose water q. s. to make the whole measure 1 pint. More spirit is often ordered and used; but much of it is apt to cause the separation of the ingredients. In many samples, and in the inferior ones generally, it is omitted altogether. Some makers add a few drops of oil of bergamot, with 2 or 3 drops each of oil of lavender and otto of roses, dissolved in the spirit.

Milk of Roses. B

2. Oil of almonds, 1 ounce; white soft soap, 1 ounce; salt of tartar, ½ dram; boiling water, ¼ pint; triturate

and subsequently agitate until perfectly united. When cold, further add, of rectified spirit, 2 fluid ounces; spirit of roses, a few drops; rose water, q. s. to make the whole measure a pint.

Eczema Ointment.

Creolin ..... 1 ounce.
Yellow petrolatum ..... 3 ounces.

Eczema of the Hands. A

Creasoti ..... 10 minims.
Glycerini ..... 1 ounce.
M.
Apply with a feather, and wear a glove over the hand.

Eczema of the Hands. B

Dr. Frank H. Barendt, writing in the Provincial Medical Journal, recommends two applications for the treatment of localized eczema, viz.:

Adepis benzoati .....
Adepis lanae .....
Amyli .....
Zinci oxidi ..... } Equal parts.

M. Fiat pasta.

This is a modification of Lassar's paste.

Oxidi zinci .....
Amyli ..... } Equal parts.
Talci veneti .....

Tere bene. Fiat pulvis aspersorius.

The paste is to be spread thickly over the affected area, then covered with bandages. If the patient avoid all wetting of the dressings it will expedite cure. Gloving of the hands is imperative, and, except when the paste is being renewed, the gloves, which should be two or three sizes too large, are to be worn continuously. The hands should be dressed after the day's work is done. As the eczema improves, the paste may be discarded and the dusting powder copiously dredged into the fingers of the gloves.

Startin's Remedy for Eczema Rubrum.

Magnes. sulph..... ½ ounce.
Tr. ferri mur..... 2 drams.
Tr. zingib..... 1 dram.
Tr. colchici ..... 1 dram.
Aq. ad..... 8 ounces.
M. Ft. mist.
One ounce bis terve in die.
Ung. hyd. fort..... ½ dram.
P. hyd. nit. ox..... 10 grains.
Adeps recent ..... 1 ounce.
M. Fit ung.
Omne mane utend.

Sea Foam.

Cologne spirits, 188 per cent ..... 4 ounces.
Castor oil ..... 1 ounce.
Oil of lavender..... 15 minims.
Stronger water of ammonia ½ ounce.
Water, q. s. to measure.... 16 ounces.

Mix the oils and spirit; add the ammonia and enough water to make up to 16 ounces.

Ammonia Dry Shampoo.

Powdered castile soap..... 2 ounces.
Cologne spirits, 188 per cent 16 ounces.
Carbonate of potash ..... ½ ounce.
Oil of bergamot..... 10 drops.
Oil of lemon ..... 5 drops.
Water ..... 3 ounces.
Aqua ammonia ..... 5 ounces.

Dissolve the oils and soap in the cologne spirits; add the potash and the water; let stand with occasional agitation for 3 days; filter, then add the ammonia.

Shampoo Liquid. A

Ch. & Dr.

Below we give a number of formulae from which a suitable one may be selected:

Tinct. arnica..... 1 dram.
Tinct. cantharides ..... 2 drams.
Water of ammonia ..... 3 drams.
Alcohol ..... 8 fl. ounces.
Soft water ..... 8 fl. ounces.

.. Shampoo Liquid. B

Aqua ammonia ..... 2 fl. ounces.
Tinct. cantnarides ..... 1 fl. ounce.
Tinct. Capsicum ..... 1 ounce.
Alcohol .....32 fl. ounces.
Water ..... 32 ounces.
Carbonate of potash..... 1 ounce.

Shampoo Liquid. C

Ammonia carbonate..... 4 drams.
Borax ..... 1 ounce.
Dissolve in water..... 2 pints.
Add:
Glycerin ..... 2 ounces.
Jamaica rum .....6 pints.
Bay rum ..... 2 pints.

Shampoo Liquid. D

Alcohol ..... 8 fl. ounces.
Soap ..... 2 ounces.
Water ..... 8 ounces.
Carbonate of potash..... 4 drams.
Oil of lavender .....20 minims.
Tinct. quillaia ..... 2 fl. ounces.

Shampoo Liquid. E

Glycerin ..... 1 fl. ounce.
Aqua ammonia ..... 2 fl. ounces.
Alcohol .....16 fl. ounces.
Water, q. s. to make.....32 fl. ounces.

Shampoo Liquid. F

Carbonate of potash..... 1½ drams.
Tinct. cantharides..... 2 drams.
Water of ammonia..... ½ ounce.
Bay rum ..... 1½ ounces.
Alcohol ..... 1½ ounces.
Water ..... 1½ ounces.

Dandruff Pomade.

Pilocarpine ..... ½ dram.
Quinine hydrochlorate.... 1 dram.
Precipitated sulphur ..... 2½ drams.
Peruvian balsam ..... 5 drams.
Ox-bone marrow ..... 3 ounces.
Make a pomade.

This is rather an expensive, but seemingly effective, article, proposed by the Pharm. Zeitung.

Pomade for Scurf.

Ung. hydrarg. nitratis.... 3 drams.
Cera alb. ..... ½ dram.
Vaselin ..... 1 oz. 1 dram.
M.

Brilliantine Clear and Inseparable.

Castor oil, clear white..... 1 ounce.
Cologne spirits, 188 per cent ..... 4 ounces.
Tincture of rose.....30 minims.
Tincture of jasmin..... 15 minims.

Lip Salve Rose.

White petrolatum..... 3 pounds.
Purified beef suet..... 1½ pounds.
White wax, pure..... 1 pound.
Spermaceti ..... 6 ounces.
Vermilion, to color..... q. s.
Perfume with:
Oil of Bergamot..... 1 ounce.
Oil of rose geranium..... 3 ounces.
Oil of sandalwood..... ¾ ounce.

Melt the wax and the fats together; when nearly cold add the perfume and stir in enough Chinese vermilion to give the salve a rose color.

Chapped Hands and Face.

Ch. & Dr.

An excellent remedy for chapped hands and face, and one that, if properly used, will cure the most painful cases in from twelve to twenty-four hours, is compounded as follows:

Tr. benzoin, co..... 10 minims.
Spt. vini. rect..... 2 drams.
Aquae rosae ..... 30 minims.
Glycerini ad..... 1 ounce.
M.

Sig: Apply to chapped surfaces at night, after they have been washed with soap and warm water, and thoroughly dried. A second application is rarely required. This remedy is equally efficacious in the treatment of fissured, bleeding, and sore lips.—Med. Times.

Plain Shaving Cream.

Mutton suet	85 pounds.
Coca nut oil	15 pounds.
Potash, lye	50 pounds.

Stick Pomade—Coudray's.

(Cosmetiques.)

Beef suet	4½ pounds.
Paraffin wax	1¼ pounds.
Perfume with:	
Oil of lavender	1 ounce.
Oil of red thyme	½ ounce.
Oil of myrbane	1 dram.

Color with lamp black or burnt umber, as required. For pink color use vermilion, q. s.

Stick Pomade—Black. A

Orange flower pomade	2 pounds.
Cassie flower pomade	½ pound.
Petrolatum	4½ pounds.
Yellow wax	8 pounds.
Oil of cloves	1 ounce.
Oil of white thyme	1 ounce.
Oil of bergamot	2 ounces.
Oil of orange	2 ounces.
Oil of nutmegs	¼ ounce.
Lamp black to color	q. s.

Stick Pomade—Black. B

Suet	1½ pounds.
Wax	½ pound.
Germantown lampblack	½ ounce.
Venice turpentine	16 drams.
Oil citronelle	5 1-3 drams.
Oil of lemongrass	5⅓ drams.
Oil of lavender	2 2-3 drams.
Oil of cinnamon	1 1-3 drams.
Oil of cloves	1 1-3 drams.

Stick Pomade—White. A

Suet, or washed pomade.	1½ pounds.
Wax, best white	½ to 1 lb.
Venice turpentine	16 drams..
Bergamot oil	½ dram.
Cinnamon oil	1 1-3 drams.
Lavender oil	20 drops.
Cloves oil	40 drops.
Citronelle oil	¼ dram.
Lemongrass oil	½ dram.

Stick Pomade—Black. C

Petrolatum, yellow	2 pounds.
Paraffine, hard	4 pounds.
Rosin, brown	½ pound.
Lamp black	q. s.

Perfume same as next formula.

Stick Pomade—White. B

Petrolatum, white	2 pounds.
Paraffine, hard	4 pounds.
Rosin, pale yellow	½ pound.
Oil of lavender	1 dram.
Oil of bergamot	1 dram.
Oil of lemongrass	½ dram.
Oil of cassia	½ dram.

Cocoa Nut Cream for the Hair.

Castor oil, white	64 ounces.
Cocoa nut oil, white	16 ounces.
Cologne spirits, 188 per cent	64 ounces.
Perfume with:	
Oil of lavender	1 ounce.
Oil of cloves	½ ounce.
Oil of cassia	½ ounce.
Oil of bergamot	1 ounce.

Mix the cologne spirit with the castor oil, add the perfume, melt the cocoa nut and add to the other ingredients.

HAIR PREPARATIONS.

Hair Oil, Perfume For.

Oil of lavender..... 2 ounces.
Oil of bergamot..... 2 ounces.
Oil of lemon..... 2 ounces
Oil of cinnamon..... 1 dram.
Oil of rosemary..... 2 drams.
Oil of rose geranium..... 1 ounce.
Oil of cloves..... 1 dram.

Mix.

Hair Renewer.

Lac. sulphur ..... 3 ounces.
Acetate of lead..... 1 ounce.
Water, distilled.....58 ounces.
Glycerine ..... 4 ounces.
White Rose ..... 2 ounces

Triturate the lac. sulphur and glycerine together in a mortar; dissolve the lead in the water and add to the sulphur and glycerine; tnen add the perfume. Stir well when bottling, so as to equalize the amount of sulphur in each bottle.

Quinine and Jaborandi Tonic for the Hair.

Quinine sulphate..... 1 ounce.
Cologne spirits, 188 per ct...48 ounces.
Fluid extract of jaborandi.. 6 ounces.
Glycerine .....48 ounces.
Bay rum .....24 ounces.
Water .....48 ounces.
Rose water .....84 ounces.
Vinegar of cantharides..... 6 ounces.

Triturate the quinine in a mortar with the vinegar of cantharides; add the water and enough acetic acid to entirely dissolve the quinine; add the glycerine, cologne spirits, bay rum, jaborandi and rose water; add color, either red or brown, as may be desired, and filter. This is an excellent hair tonic.

Jaborandi Hair Tonic.

Fliud extract of jaborandi.1 ounce.
Spirits of ammonia aromatic ..... 4 ounces.
Rose water ..... 3 ounces.
Glycerin ..... ½ ounce.

Mix the fluid extract with the spirits of ammonia; add the glycerine and rose water.

Hair Dye.

Black or Brown.

No. 1.

Pyrogallic acid..... 2 ounces.
Water, distilled.....80 ounces.
Alcohol .....16 ounces.

Mix (for the large bottle).

No. 2.

Silver nitrate ..... 4 ounces.
Water, distilled.....24 ounces.
Ammonia water, 16 degrees, q. s. or..... 8 ounces.
(For the small bottle.)

Dissolve the silver in the distilled water; add the ammonia water slowly with frequent shaking, until the precipitate first formed is dissolved.

Directions.—First clean the hair from all oil or grease, by washing well with soap and water—and well rinsing the hair to remove the soap, then when dry, apply the contents of large bottle thoroughly (with a small brush is best), then when again dry, use contents of small bottle—with another brush—tooth brush will be found most convenient. If a brown color is desired, add a few drops of soft water to contents of small bottle. When the dye is well set, wash with clean water. If the skin is soiled, wipe it off with a wet cloth immediately. This hair dye is instantaneous in its effect—and is not injurious to the hair. Use in daylight.

Hair Dye.

(One Solution Brown.)

Nitrate of silver crystals..70 grains.
Stronger water of ammonia ..... q. s.
Orange flower water..... ½ ounce.
Glycerin ..... ¼ ounce.
Distilled water, to make.... 4 ounces.

Dissolve the silver in 2 ounces of the water and add water of ammonia q. s. to dissolve the precipitate first formed. Then add the other ingredients, making up to 4 ounces with distilled water.

Put up in dark glass bottles.

Directions for Use: After the hair has been well washed with a little borax and water, apply the dye evenly with a soft brush night and morning until the proper tint is obtained. It is advisable to prevent, so far as possible, the skin coming in contact with the dye. Pomatum and oil must not be used whilst the dyeing process is being done.

Hair Colorer. A

Nitrate of silver..... 6 grains.
Sulphate of copper..... 6 grains.
Water of ammonia..... q. s.
Water, q. s. to make..... 1 ounce.

Dissolve the salts in ½ ounce of distilled water, and add water of ammonia until the precipitate is dissolved, then add the remainder of the water.

Hair Colorer. B

Permanganate of potash....60 grains.
Rose water ..... 3 ounces.

Hair Colorer. C

Pyrogallic acid.....30 grains.
Spirits, proof..... 1 ounce.
Soda hyposulphite..... ½ ounce.
Water ..... 3 ounces.

Dissolve the pyro in the spirit, the soda in the water and mix them.

Hair Colorer. D

Pyrogallic acid.....60 grains.
Chloride of copper..... 4 grains.
Cologne spirits, 188 per ct. ½ ounce.
Water, q. s to make up to. 4 ounces.

Bismuth Hair Dye.

No. 1.

H. F. Meier gives the Druggists' Bulletin the following formula for a bismuth hair dye to produce either brown or Black No. 1:

Bismuth subnitrate.....200 grains.
Water ..... 2 ounces.
Nitric acid, U. S. P. q. s. or 420 grains.

Use heat to effect solution.

No. 2.

Tartaric acid .....150 grains.
Sodium bicarbonate.....168 grains.
Water ..... 3½ ounces.

When effervescence of the latter has ceased, mix the cold liquids by pouring No. 1 into No. 2, with constant stirring. Allow the precipitate to subside, transfer it to a filter, or strainer, and wash with water until free from the sodium nitrate formed, as this salt would be an unnecessary impediment to the operation of the dye. The completeness of the washing can readily be determined by evaporating a few drops on a watch glass. If pure water has been used, no greater amount of residue should remain than the water itself will produce. Now allow the magma to drain until its weight is reduced to at least 4 ounces. This can be readily determined without removing it from the filter and funnel if both have been previously weighed. Now transfer the magma, which consists of bismuth tartrate, to a dish, and dissolve it by the addition of sufficient aqua ammoniae. (About 90 to 100 minims of stronger water of ammonia, U. S. P., will be required.) Now dissolve 100 grains of sodium hyposul-

phite in 3 ounces of water, and mix the two liquids. The total volume of the product should be 7 or 8 fluid ounces, which would make the solution contain about 10 per cent of bismuth tartrate, the product from the above quantities being nearly 300 grains. The author advises the addition of 1 ounce of glycerin as calculated to make it more effective in coloring the hair, as this ingredient prevents entire drying out of the constituents, and thus favors a continuation of the decomposition. Should it be desired to produce a jet black, this may be accomplished (after the dye given above has first been applied and allowed to dry) by the application of a solution of an alkaline sulphite. It is not necessary that the latter salt should be absolutely pure, as the commercial sulphide of potassium answers quite well if fresh or undecomposed. The application of the dye and mordant is usually made by means of a tooth brush and comb, so as to avoid staining the scalp. The author points out that this dye is presumably harmless.

DENTAL PREPARATIONS.

Cherry Tooth Paste.

Precipitated chalk	6¼ pounds.
Rose pink, powdered...	3 pounds.
Orris root, powdered....	10 ounces.
Gum myrrh, powdered ..	1 ounce.
Oil of bitter almonds, sine Prussic acid.....	60 minims.
Oil of cloves.....	15 minims.
Saccharin	60 grains.
Tincture of jasmine.....	4 ounces.
Glycerine	of each
Clear water.....	equal parts.

to make a paste.

Place the chalk, rose pink, orris root and myrrh in a large mortar (having first sifted them to remove grit). Dissolve the oils and saccharin in the tincture of jasmine and mix with 1 quart of glycerin and 1 quart of clear water; triturate the powders with this and continue adding water and glycerine, mixed, in equal parts, until the paste is of the right consistence.

Rose Tooth Paste.

Precipitated chalk	6¼ pounds.
Rose pink, powdered....	3 pounds.
Orris root, powdered....	10 ounces.
Oil of rose.....	30 minims.
Oil of rose geranium....	15 minims.
Saccharin	60 grains.
Tincture of rose.....	4 ounces.
Glycerine	of each
Clear water	equal parts.

to make a paste.

Proceed as directed for Cherry Tooth Paste.

Charcoal Tooth Paste.

Willow charcoal, powd..	6¼ pounds.
Orris root, powdered....	1¼ pounds.
Saccharin	50 grains.
Oil of rose geraniol.....	30 minims.
Oil of wintergreen.....	5 minims.
Tincture of cassie.....	3 ounces.
Glycerine	of each
Clear water	equal parts.

to make a paste.

Proceed as directed for Cherry Tooth Paste.

Fragrant Tooth Powder.

Precipitated chalk	2 pounds.
Cream of tartar	2 ounces.
Powdered gum myrrh.....	2 ounces.
Powdered orris root.....	4 ounces.
Powdered sugar	4 ounces.
Powdered rose pink.....	8 ounces

Mix and run through sifter and mixer twice.

Saponaceous Tooth Powder

Precipitated chalk	3½ pounds.
Powdered orris root.....	8 ounces.

Powdered castile soap	8	ounces.
Oil of wintergreen	1	dram.
Oil of cloves	1	dram.
Oil of peppermint	2	drop.s

Mix and run through sifter and mixer twice.

Quinine Tooth Powder.

Precipitated chalk	16	ounces
Quinine sulphate	30	grains.
Powdered borax	½	ounce.
Powdered soda bicarb.	½	ounce.
Powdered saccharin	30	grains.
Powdered orris root	2	ounces.
Oil of rose geraniol	15	minims.
Oil of cloves	5	minims.

Mix and run through sifter and mixer twice.

Carbolic Tooth Powder.

Precipitated chalk	16	ounces.
Boric acid	½	ounce.
Powdered cinchona bark	½	ounce.
Powdered pumice	1	ounce.
Powdered soda bicarb.	½	ounce.
Powdered saccharin	30	grains.
Powdered orris root	2	ounces.
Carbolic acid	1	dram.
Oil of rose geranium	1	dram.
Oil of cloves	10	drops.
Oil of peppermint	5	drops.

Mix and run through sifter and mixer twice.

Saponaceous Tooth Wash—Antiseptic.

Castile soap, white	2	ounces.
Cologne spirits, 188 per ct.	48	ounces.
Water	56	ounces.
Menthol	20	grains.
Boric acid	½	ounce.
Simple syrup	8	ounces.
Glycerine	2	ounces.
Oil of wintergreen	60	minims.
Oil of peppermint	60	minims.
Oil of cloves	15	minims.
Oil of cassia	10	minims.
Carmine solution, ammoniated	q. s.	
Caramel	q. s.	

Dissolve the oils, menthol and boric acid in the cologne spirits; dissolve the soap in the water; add the glycerine and syrup; mix the two solutions by pouring the spirituous solution into the watery solution, stirring slowly the while; add the coloring and filter at a low temperature.

Fragrant Tooth Wash.

Cologne spirits, 188 per ct	48	ounces.
Boric acid	½	ounce.
Thymol	60	grains.
Glycerine	5	ounces.
Syrup	4	ounces.
Glycerine	2	ounces.
Water	56	ounces.
Oil of eucalyptus	40	minims.
Oil of wintergreen	60	minims.

Dissolve the oils, thymol and boric acid in the cologne spirits; add the water, glycerine and syrup. Filter.

Depilatory.

Sodium sulphide	3	drams.
Quicklime	1¼	ounces
Powdered starch	1¼	ounces.

Mix.

To be made into a paste with water and applied to the hairy part. In three or four minutes wipe it off with the back of a knife.

Bust Developer.

Ferri sulphat	8	grains.
Acid. sulph. aromat.	½	dram.
S. V. R.	1	ounce.
Syrupi	4	ounces.
Syr. rhoeados	½	ounce.
Aq. ad	8	ounces.

Mix.

The directions for using the preparation reveal the cause of any improve-

ment which may follow the use of the medicine. They are to the following effect:

A teaspoonful is to be taken in a little cold water three times a day—once after breakfast, once after dinner, and once again just before retiring to rest; also the breasts should be gently rubbed at least twice a day, say morning and night—in a circular and upward manner.

Cleansing Fluid.

Oleic acid	6	ounces.
Caustic potash	1½	ounces.
Columbia spirits	6	ounces.
Chloroform	8	ounces.
Gasoline	128	ounces.

Dissolve the caustic potash in the Columbia spirits. Heat the oleic acid in a water bath to 150 degrees F.; add the solution of potash, stir until thoroughly mixed. When cold, mix in the chloroform, and then mix in the gasoline.

Good for all-round cleanser of clothes, gloves, upholstery that has been spotted with grease, etc.

Alkaline Mixture for Gonorrhoea.

Acetate of Potash	3 drachms.
Bicarbonate of Potash	3 drachms.
Citrate of Potash	6 drachms.
Cinnamon Water	8 ounces.

Mix.

Dose.—Two teaspoonfuls in water three times a day.

RHEUMATISM REMEDY.

Carbonate of Potash	1	ounce.
Iodide of Potash	2	ounces.
Salicylate of Soda	1	pound.
Wine of Colchicum	32	ounces.
Sacharin	½	drachm.
Oil Wintergreen	¼	ounce.
Glycerine	32	ounces.
Caramel	½	ounce.

Disinfection of Rooms.

First cut old newspapers into strips four inches wide, wet with water and with them close all crevices likely to let in air—for 1000 cubic feet of space use for sulphur method.

Sulphur flowers two pounds, use two tin pie plates, put a pound of Sulphur on each, wet with a little alcohol, put a brick under each plate; apply a match to the sulphur and have the room tightly closed.

Formaldehyde Method.—Place ten ounces of Formaldehyde, 40 per cent in a three gallon metal pail; pour into this gently, five ounces of Permanganate of Potash crystals—same directions as for Sulphur Disinfection.

McLaughlin's Method.—Mix six ounces of Formaldehyde with two ounces of carbolic acid; saturate a nine foot sheet with this mixture and hang the sheet in the room.

San Jose Scale Killer.

(Prof. J. A. West.)

Fresh Stone Lime	15 pounds.
Sulphur	15 pounds.
Water	30 gallons.

Boil for 50 minutes, stirring occasionally then add hot water enough to make 50 gallons, apply while hot after the leaves have fallen and before the buds start in the spring—while the trees are absolutely dormant.

Bordeaux Mixture.

(W. H. Chandler, Columbia, Mo.)

Blue Vitriol (Copper Sulphate)	4 pounds.
Quick Lime	4 pounds.
Water	50 gallons.

Dissolve the Blue Vitriol by hanging it in a sack in a wooden tub of water so that the bottom of the sack just dips in the water. Hot water will dis-

solve it more readily. Slake the lime slowly so as to get it into as fine a powder as possible. Add twenty-five gallons of water to the lime. Dilute the Copper Sulphate to twenty-five gallons, then pour the two liquids at the same time into the spray barrel or tank, this is a very important step in making Bordeaux Mixture and one frequently neglected.

Homemade Bordeaux Mixture.—The proportion of six pounds of copper sulphate and four pounds of lime to each fifty gallons of water is known as the standard, but five and five to fifty has become more customary, and is especially advisable when the purity of the lime is in doubt, for it makes it more sure that all the sulphate is properly neutralized, and reduces the danger of scorching or russeting fruit.

Bordeaux Mixture is liable to injure the foliage of the peach, and for peach trees it is therefore often used in the proportion of three-nine-fifty, for less than fifty gallons of water reduce the lime and the copper sulphate proportionately.

Bordeaux Mixture should be brilliantly sky blue in color, if the lime is of bad quality the mixture will be greenish, if a pronounced green the foliage will be injured. To make it take two old tubs, and in one put half the water to be used and dissolve in it the bluestone by suspending it in a coarse meshed bag, in the other tub slake the lime and put in the other half of the water then mix the two in a barrel, dipping alternately. The lime solution should be kept well stirred, and the entire mixture must be frequently stirred while spraying.

Bordeaux mixture sometimes has a little arsenic or paris green added to kill certain insects as well as fungus, Bordeaux mixture is efficacious as a spray for the apple scab, and leaf spot, for bitter rot, for the leaf blight of pear and cherry trees the peach leaf curl of the peach, the brown rot of the peach and plum, the fungus attack known as anthracnose of grape and berries, the fungus which makes a whitish growth on grape leaves, the fungus which blights the strawberry leaves. It is excellent for the spotted leaves of the hollyhock, aster, violet and carnation and the mildewed-like leaves of the lilac.

It is efficacious for the disease which spots the leaves of the bean and the beet, it is a foe to the fungus which yellow spots celery leaves, to the fungus which mildews the leaves of the cucumber, to the disease which gives black leaves to the potato, to the rust which strikes at the stalks of asparagus. Bordeaux mixture is used as a spray and sometimes one or two sprayings are sufficient. But that it is not always a simple matter is illustrated by the treatment of grapes for black rot or anthracnose, after all dead branches, leaves and withered fruit of the previous year are collected and burned, then as the buds are swelling, spray with Bordeaux, so thoroughly, as to cover—not only the vines but also the posts and trellises. Ten or twelve days later when the grapes are in bud, spray again. Again spray when the fruit has set and repeat at intervals of ten days or two weeks, till the fruit approaches maturity.

A lime sulphur salt mixture is very powerful and should be used only when the fruit tree is dormant, when applied to the apple tree for San Jose scale, it also attacks the blister mite, on the pear tree, it attacks the jumping louse (the pear Psylla) which makes the leaves black, on the peach, it kills the borer which destroys the buds. This mixture is made in varying proportions, but a standard for fifty gallons of water is twenty pounds of unslaked lime, fifteen pounds of flour sulphur and ten pounds of salt. The lime should be twenty pounds if of

average quality but if specially good only fifteen pounds, or if poor or partly slaked thirty pounds, some leave out the salt. But salt though it does not add to the strength of the mixture, is believed to increase its adhesiveness and therefore to increase its practical value. To make it boil about ten gallons of water in an iron kettle and just before the boiling point is reached, add the fresh lime and the sulphur together, the sulphur having been made into a paste with a little water. The mixture should be constantly stirred and boiled till the sulphur is dissolved, this taking nearly an hour. The salt may be put in at any time. Add hot water till the fifty gallons is made up.

The pests attacked by lime and sulphur are peculiarly a kind in regard to which prevention is better than cure, a spray in time saves nine.

Kerosene emulsion is of great value for the destruction of plant lice, such as apple lice, cherry lice, cabbage lice, currant lice and the lice on roses, and in a general way it may be said that it should be sprayed on before the leaves curl.

Kerosene is very strong. Used alone to kill insects it has killed many a tree at the same time. Take two gallons of kerosene, one-half pound of whale oil soap or hard soap and one gallon of water. Boil the soap in the water until it dissolves, then add it boiling hot to the oil which you have not kept too near the fire. Stir or beat it vigorously until it thickens, just as a mayonaise dressing does into a bulky creamy mass. This emulsion will now keep indefinitely, ready for dilution. For winter use dilute with four or five times its quantity of water. In summer on account of the tenderness of the green foliage dilute with fifteen times its quantity. Do not use so much as to permit the fluid to run down the trunk and settle about the roots, because it may kill the trees especially if young. In a general way kerosene emulsion is excellent for insects that suck and for those which have soft bodies.

Tobacco in the form of dry dust is excellent for killing the woolly aphis at the root of the apple tree.

Paris green is for insects that chew, and is fatal to the destructive potato bug, it is also used to attack various caterpillars and bugs that are leaf devourers. Paris green also attacks the terrible codling moth, the apple worm, which causes millions of dollars loss annually, the poison is put in the blossom end of the young apple within a week after the blossom falls. London Purple has much the same chemical composition as Paris green, but is more liable to injure foliage.

The currant worm is best attacked with hellebore, a powerful vegetable poison for insects that chew. It is applied as a dry powder mixed with a little flour, and dusted on the plants through a muslin bag or in water diluted one ounce to the gallon and sprayed: as a powder it should be applied while the morning dew is on. Paris green should be used in the proportion of a fifth of a pound of paris green, and three fifths of a pound of lime to forty gallons of water.

The bag worm which hangs its bags principally on the red cedar, the arbor vitae and the willow is destructive, but is easily controlled. Pluck the bags, put them in a pile and burn them, one year's watchfulness will probably clear the place of them.

A very difficult insect to control is the rose-bug which in June covers numberless roses and peonies with crawling masses, it also attacks grapevines and fruit trees. Birds do not eat them, spraying is useless. Poison does not kill, the only way to do is to brush them off into basins of kerosene and then burn them.

The curculio is an insect which has destroyed entire plum crops for year after year, it feeds on leaves and blossoms and then attacks the fruit, sprays and poisons are of slight efficacy and the only thing to do is to go over the trees at intervals of a few days, for three weeks after the fruit sets, and strike with a padded mallet on the trunks and longer branches. The curculios drop and are caught on sheets spread underneath. Some measurably control them by putting the chicken yard around the plum yard, for the fowls pick the insects up when they drop, and catch a good many when they make their annual descent to burrow in the ground.

Dig out and destroy the white grub at the root of the strawberry, transfer your cabbage patch to clean soil if black rot has appeared, for the yellows in peaches you must ruthlessly cut and burn.

For Scale Insects.

Rosin	3½ pounds.
Caustic Soda	1 pound.
Fish Oil	8 pounds.
Water	20 gallons.

For the San Jose scale a stronger preparation is required the proportion of water being decreased by half, but such a solution is applied only when the tree is dormant.

Kerosene Emulsion.

Kerosene	2 gallons.
Whale-oil Soap	½ pound.
Water	1 gallon.

The soap is dissolved in hot water, the kerosene added, and the whole thoroughly emulsified by means of a power pump until a rather heavy creamy emulsion is produced. The quantity of soap may be increased if desired. The insecticide is applied by spraying the infected tree with an ordinary nozzle.

Liquor Arsenicalis.

Carbonate of Potash	1¼ ounces.
Arsenious Acid	1¼ ounces.
Water	128 ounces.

Dissolve the carbonate of Potash in 5 times its weight of water and heat the solution in a flask or sand bath, then add the arsenic, when dissolved add the remainder of the water.

Copper Carbonate Solution.

Copper Carbonate	6 ounces.
Ammonia Water, enough to dissolve about	3 pints.
Water to make	50 gallons.

For use when fruit is ripe or nearly so, and we do not wish to discolor with Bordeaux mixture.

Formaldehyde Solution for Potato Scab.

Formaldehyde	1 pint.
Water	30 gallons.

Soak the potatoes in this solution for about two hours before cutting into pieces before planting.

For Grain Smut.

Mix one pint of commercial formalin (40 per cent strength) with fifty gallons of water in a large tub, or barrel. Pour the grain to be treated on a floor and sprinkle with the solution from a sprinkling can until the surface of every kernel is thoroughly moistened; allow to stand in the pile ten minutes, then spread out in a thin layer in an airy place to dry, shoveling over occasionally to hasten the drying process.

Another method of using this solution is to place the grain in gunny sacks and immerse in the liquid for ten minutes, taking care to see that the solution penetrates to the center of the mass. Hang up and allow to

drain for five or ten minutes, then spread out and dry.

This method is entirely effective for smuts of both oats and wheat.

Insecticides.

Paris Green:

Paris green..... 1 pound.
Quick lime..... 3 pounds.
Water .....100 to 175 gallons.

This insecticide is for *biting insects* only. It may be applied along with Bordeaux mixture, in which case the Bordeaux mixture is considered as so much water and the Paris green and lime added to it in the above proportions. The Paris green will mix with the water more readily if mixed with the lime after slaking and before putting into the spray tank. If added dry to the water, it is apt to float around on top of the liquid. It is thought to be the best insecticide to use with the lime sulphur wash.

Arsenate of Lead.

Lead acetate..... 24 ounces.
Arsenate of soda..... 8 ounces.
Water .....100 gallons.

Use only the very best chemicals in making this preparation. Dissolve each of the materials in a separate bucket half full of water. After both are thoroughly dissolved, pour them together into another bucket and allow the mixture to stand for a few hours. A white precipitate or sediment is formed, which is the arsenate of lead. All of the bucketful should be added to a spray tank containing one hundred gallons of water, and it is then ready for use.

Arsenate of lead is one of the best insecticides to use for biting insects. It is less liable to injure the foliage than Paris green, sticks very well, and its white color shows very plainly where it has been applied.

Hellebore.

Fresh powdered white hellebore ..... 1 ounce.
Water .....3 gallons.

Apply when thoroughly mixed. Hellebore is used when it is not advisable to use arsenates on account of the tender foliage or proximity to the ripening period.

Kerosene Emulsion.

Kerosene (coal oil)..... 2 gallons.
Hard soap.....½ pound.
Water (soft)..... 1 gallon.

"Lily Baking Powder."

Starch .....70 pounds.
Soda .....58 pounds.
C. A. P.....29 pounds.
C. T. S.....44 pounds.
Mag. Carb..... 2 pounds.

C. T. S. & C. A. P. can be obtained from Provident Chemical Wks. of St. Louis.

Stick Blue.

Soluble blue..... 8 pounds.
Powd. Borax..... 4 pounds.
Yellow Dextrine..... 4 pounds.
Acid Oxalic..... 1½ pounds.
Gum senegal..... 2 pounds.

Dissolve gum in water (hot) Q. S. to dissolve the whole into a thick paste. Before mixing run all ingredients through a fine sieve.

Table Jelly Concentrated.

White granulated sugar..16 pounds.
Glucose ..... 8 pounds.
Gelatine ..... 3½ pounds.
Water .....32 ounces.
Citric Acid powdered..... 1½ ounces.
Essence of lemon soluble. 8 ounces.
Salicylic acid..... ½ ounce.

Orange coloring a sufficiency.

Soak the gelatine until soft in sufficient water to cover it. Boil the sugar and water and half the glucose to a temperature of 245 F., remove the pan from the fire and gently stir in the remainder of the glucose, the gelatine and acid. Let the mixture remain a short time, then skim off the top, next add the lemon, run the mixture into tins and when cold cut to size—for raspberry, strawberry, pine apple, etc., etc., use 12 ounces of the respective flavors.

Rheumatic Tablet.

Soda salicylate ..... 5 grains.
Macrotin ..... 1-10 grain.
Extract poke root..... 1-2 grain.
Colchicine .....1-120 grain.
Codeine sulphate..... 1-16 grain.
For 1 tablet.

Brilliantine.

Paraffin oil liquid..... 6 ounces.
Glycerine ..... 2 ounces.
Oil bitter almonds..... 8 drops.
Oil rose..... 1 drop.
Mix odors thoroughly first then add glycerine.

Syrup of Hydriodic Acid.

Diluted hydriodic acid 10 per cent.....13 ounces.
Distilled water.....39 ounces.
Simple Syrup.....78 ounces.
Mix the acid and water—add the syrup. Make the syrup by the cold process.

Salt of Lemon.

Oxalic acid powdered.....½ ounce.
Cream of tartar powdered.. 1 drachm.

Reduction of Spirits.

Fritzsche Schimmel & Co., New York.

Rule I.—To reduce spirits of a given strength to any percentage required.

Multiply the number of gallons with the given percentage; divide the product by the percentage required; this will give the whole number of gallons to be obtained. Subtract from this the original number of gallons, and the remainder will be the number of gallons of water that are to be added.

Example.—Reduce 100 gallons spirits of 80 per cent to 55 per cent. 100 gallons X 80 per cent, 8,000; divided by 55—145 5-11 galls. (reduced spirits); subtract 100 galls. (original No. of galls.), leaves 45 5-11 galls. water to be added.

Thus: 100 gallons 80 per cent makes 145 5-11 gallons reduced spirits of 55 per cent.

Rule II.—To find how much high proof spirits it take to fill a vessel of known capacity with reduced spirits of a certain required percentage.

Multiply the capacity of the vessel by the percentage desired, and divide this product by the percentage of the high proof spirits, and the quotient will be the number of gallons of high proof spirits which are wanted.

Example.—How much 90 per cent spirits will it take to fill a vessel of 200 gallons with 50 per cent spirits?

200 X 50, 10,000; divide by 90—111 1-9 galls. of 90 per cent spirits; and consequently it takes 88 8-9 galls. of water, which will make 200 galls. of spirits of 50 per cent.

Rule III.—To determine the percentage of a mixture of 2 or more spirits, each having a different degree of strength.

Multiply the quantities by their separate percentages, add these products, and divide the sum by the total number of gallons.

Example.—Mix 30 gallons of 40 per cent with 65 gallons of 36 per cent

spirits, of what percentage will the mixture be?

30	X	40	1,200
65	X	36	2,340
			3,540

The whole No. of galls (30 X 65) 95 :3,540—37¼ the percentage of the mixture.

Rule IV.—To ascertain the quantity of pure or absolute alcohol in any given amount of liquor.

The quantity of absolute alcohol contained in any amount of liquor is readily ascertained after testing the strength with Tralles Hydrometer at 60 degrees Fahrenheit by simply multiplying the figures expressing the quantity of liquor by the ascertained strength.

Example.—Multiply the number of gallons by the ascertained degrees of strength and divide by 100.

32 gallons by 60 degrees.

Divide by 100: 1,920—19 1-5 gallons of pure Alcohol.

Rule V.—To reduce spirits of a given number above proof to proof spirits by the substitution of water for spirits.

Multiply the number of gallons by 100, then add the number which the spirits are above proof to 100, and divide the above product by the sum thus obtained; subtract the quotient from the number expressing the original quantity of spirits, and the answer will give the number of gallons to be removed from the spirits and replaced by water in order to reduce the high proof spirits down to proof.

Example.—To reduce a cask of 30 gallons of spirits 20 above proof to proof spirits:

Above proof	20	gallons,	30
Add	100	multiply by	100
Divide	120		3,000—25
Original quantity			30 gallons.
Deduct			25
			5

It will be seen by the above that 5 gallons have to be taken from the spirits and the same quantity of water added to reduce it to proof.

Rule VI.—To ascertain the number of gallons at any required number below proof in any given number of proof gallons.

Multiply the given number of proof gallons by 100, and then divide the product thus obtained by a number found by deducting the required number of degrees below proof from 100.

Example.—How many gallons 25 below proof are there in 35 gallons proof?

100	35 gal. pr.
25 below pr.	100
75.....	3,500—46 2-3 gals. below pr.

Rule VII.—To increase the strength of spirits from any degree or percentage Tralles to a higher given degree by substituting spirits of a still higher degree.

Multiply the number of gallons by the difference in degrees between the required strength and the spirits which are to be raised. Divide this product by the difference in degrees between the spirits to be substituted and the spirits to be raised. The quotient will show how much of the spirits of the low degree are to be replaced by spirits of the high degree.

Example.—To increase 40 gallons at 50 degrees Tralles to 80 degrees by substituting spirits of 90 degrees Tralles:

Required strength	80.	90 spirits to be substituted	40	number of gallons.	
Spirits to be raised	50.	50 spirits to be raised	30	multiply by difference.	
Difference	30.	40 : . .	1,200	= 30 galls.	

The preceding example shows that 30 gallons of spirits at 50 degrees are to be removed and replaced by the same quantity of spirits at 90 degrees.

Rule VIII.—To raise low proof spirits to a higher required proof by the addition of high proof spirits.

Multiply the number of gallons by a number expressing the difference in degrees of strength between the given proof of the spirits to be raised and the required proof to which it is to be raised. Divide the product thus ascertained by the sum of the given proof and the high proof spirits to be added, and the quotient will give the number of gallons to be replaced.

Example.—To raise a cask of 40 gallons at 10 below proof to 15 above proof by means of spirits 40 above proof.

Given proof 15 below.
Required proof 10 below.

5

High proof 10 above 5 difference.
Given proof 15 below 40 gallons.

25 200 . gallons.

Rule IX.—To raise spirits of a given number above proof to a still higher degree of strength by the addition of high proof spirits.

First multiply the number of gallons by a number expressing the difference in degrees of strength between the given proof of the spirits to be raised and the required degree to which they are to be raised. Divide the product thus ascertained by a number to be found by subtracting the difference in degrees between the spirits to be raised and the high proof spirits employed to raise them. The quotient will give the number of gallons to be replaced.

Example.—To raise a cask of 35 gallons spirits 15 above proof to 20 above proof by the addition of spirits 30 above proof.

20 required proof.
15 given proof.

5 difference.
Subtract 15 35 multiplied by difference.
From 30 5 number of gallons.

15 175 . 11⅛ gallons.

Rule X.—To raise spirits of a given number below proof to a required strength above proof by the substitution of high proof spirits.

Multiply the number of gallons by the number expressing the difference in degrees of strength between the high proof spirits to be added and the required degree to which they are to be raised.

Divide the product thus found by the difference in degrees between the spirits below proof and the high proof spirits to be added; then subtract the quotient from the original number of gallons, and the remainder will show the quantity of low spirits to be removed and their place supplied by the addition of the same quantity of high proof spirits.

Example.—To raise a cask of 40 gallons at 10 below proof to 15 above proof by means of spirits 40 above proof.

40 40 above proof, 40 No. galls. [ence.
15 10 below proof, 25 multiplied by differ-
Difference 25 50 . 1,000 . 20
40 gallons original quality to be raised.
20 deduct quotient.
20

The above example shows that 20 gallons should be taken from the low proof spirits and the same quantity of spirits added at 40 above proof to raise it to 15 above proof.

Rule XI.—To raise spirits of a given number below proof to proof spirits by the substitution of high proof spirits.

Multiply the number of gallons by the number which the high proof spirits are above proof; divide the product by a number to be found by adding the given number the spirits are below proof to the number the high spirits are above proof; subtract the quotient from the original number of gallons, and the remainder will show the quantity of low proof spirits to be removed and their place to be supplied by the addition of high proof spirits.

Example.—To raise a cask of 40 gallons at 5 below proof to proof by means of spirits 35 degrees above proof.

35 above proof. 40 No. of gallons.
5 below proof. 35 above proof.

40 . . 1,400 . 35
40 gallons.
35 quotient.
5

It will thus be seen that 5 gallons should be taken from the low proof spirits and the same quantity of spirits added at 35 above proof in order to raise them to proof strength.

Rule XII.—To ascertain the cost of any quantity of alcohol at any degree or percentage of strength above or below proof.

Alcohol is always bought and sold at so much above or below proof. To ascertain the price of a quantity of alcohol add the percentage above proof or deduct the percentage below proof and multiply by the price per gallon.

Example.—Forty gallons of alcohol 25 per cent above proof, cost at 125 per cent proof?

25 per cent of 40 is 10; add 40 to 10, which gives 50; multiply 50 by 125, the price per gallon, and you get $62,50, or 156½ cents per gallon.

Again: What will 40 gallons alcohol 25 per cent below proof cost at 125 cents per gallon proof?

25 per cent of 40 is 10; deduct 10 from 40, leaves 30; multiply 30 by 125 gives $37.50, or 93¾ cents per gallon.

Library Paste.

White glue ..... 16 ounces.
White sugar ..... 8 ounces.
Cornstarch ..... 4 ounces.
Glycerine ..... 12 ounces.
Carbolic acid ..... 1 ounce.
Water ..... 7 pints.

Cover glue with part of water and soak over night; dissolve starch in cold water; heat balance to boiling point, turn in the glue, starch and glycerine; cook 3 to 5 minutes; when partly cool, add acid.

Soluble Lemon.

Oil of lemon ..... ¾ ounce.
Cologne spirits ..... 10 ounces.
Water ..... 9 ounces.
Magnesia carbonate ..... ½ ounce.

Combine oil and alcohol; stand 48 hours; add magnesia; heat water to 100 degrees; turn very slowly into first mixture; stirring well; then filter.

Condensed Custard.

(London C. & D.)

Milk ..... 1¼ pints.
Eggs, strictly fresh..... 3
Sugar ..... 2½ ounces.

Mix and evaporate in vacuo, to the consistence of cream at a temperature of 110 degrees to 120 degrees F. and seal in air-tight tins. For use, the contents are mixed with water, and boiled or baked in the usual way.

Soft Soap.

Raw linseed oil..... 112 ounces.
Caustic potash ..... 32 ounces.
Water ..... 128 ounces.
Alcohol ..... 10 ounces.

Dissolve the potash in the water; heat the solution to 160 F.; heat the linseed oil in a capacious vessel to 160 F.; add the solution of potash to the warm linseed oil and mix thoroughly. Then add the alcohol. After this is well mixed in, continue the heating at 160 F. (without stirring) until a small portion will dissolve in boiling water without oil globules separating.

Celery Nervine.

Celery seed, ground..... 2 ounces.
Black haw, ground..... 2 ounces.

Coca leaves, ground	1 ounce.
Gentian root, ground	½ ounce.
Guarana, ground	1 ounce.
Alcohol	16 ounces.
Water	16 ounces.

Macerate the drugs for 10 days with half of the alcohol and water mixed, then percolate with the remainder of the menstruum; 15 grains of soluble saccharine may be added.

Canada Pine Compound for Gargles and Injections.

Alum, ground	¾ ounce.
Zinc sulphate	¾ ounce.
Sodium chloride	¼ ounce.
Oil of hemlock	5 drops.
Carbolic acid crystals	5 drops.
Thymol	5 grains.
Camphor	5 grains.
Glycerine	2 ounces.
Water enough to make	16 ounces.

Dissolve the salts in 8 ounces of the water; mix the oil of hemlock, carbolic acid, thymol and camphor, and add to the glycerine. Then add the solution of salts and enough water to make up to 16 ounces.

Sealing Wax, Red.

Venice turpentine	3 pounds.
Common rosin	1 pound.
Gum shellac	8 pounds.
Vermilion (American)	1 pound.

Melt the Venice turpentine, rosin and gum shellac; stir in the vermilion.

Emulsion of Benzoin.

Gum acacia, powdered	½ ounce.
Tincture benzoin (1 drachm to 1 ounce alcohol)	¼ ounce.
Oil of bitter almonds	1 drop.
Terpineol	5 drops.
Oil bergamot	2 drops.
Oil lavender	2 drops.
Oil sweet almonds	½ ounce.
Water enough to make	4 ounces.

Pour half an ounce of the water into a mortar with the gum acacia; rub into mucilage; add the tincture of benzoin, and the other oils to the oil of sweet almonds; emulsify by rubbing and adding the remainder of the water.

Syrup Quinine, Tasteless.

(5 grains.)

Quinidine alkaloid	5120 grains.
Oil of lemon	30 drops.
Carbonate of potash	10 grains.
Simple syrup	128 ounces.

Rub the oil of lemon in a mortar with the 10 grains of carbonate of potash; then add to this a small portion of the simply syrup (half a pint), and rub well until the oil and the carbonate of potash is well mixed with the syrup; then add to the remainder of the syrup the quinidine and the flavoring; shake well. Oil of peppermint may be substituted for the oil of lemon. If red syrup is desired, color with carmine coloring.

Syrup Dover's Powder.

Sulphate potash	1 ounce, 32 grs.
Hot water	1 pint.
Sugar	12 ounces.
Laudanum (1870)	1½ ounces.
Fl. ext. ipecac	64 minims.

Dissolve the sugar and sulphate potash in the hot water and evaporate to 15 fluid ounces; strain, and when cool add the tincture opium and fluid extract ipecac.

Gargle and Wash for General Use.

Sulphate of magnesia	1 ounce.
Water	16 ounces.
Carbolic acid	10 drops.

Very cheap and very good; excellent as a spray for tonsilitis.

To Remove Superfluous Hair.

Iodine tincture 4
Castor oil 6
Alcohol 48
Collodion 100

Paint the hairs daily for four days. When the collodion is removed the hairs will be found imbedded in it.

Diuretic Drops.

Cubebs tincture..... 1 ounce.
Copaiba oil..... 1 drachm.
Santal oil ..... 1 drachm.
Buchu fluid extract..... 1 ounce.
Alcohol ..... 1¾ ounces.

Dose: 10 to 15 drops in a teaspoonful of granulated sugar, three to four times daily.

Syrup of Prunes.

Senna leaves ..... 21 ounces.
Fennel seed ..... 5 ounces.
Anise seed ..... 2 ounces.

Boil in three pints of water, express and set aside.

Prunes ..... 1 pound.

Boil in two pints of water, strain and set aside.

Salicylic acid ..... 1 drachm.
Dissolve in alcohol..... 1 ounce.
Glycerine .....18 fl. ounces.
Rochelle salts ..... 4½ ounces.
Saccharine solution..... 1 ounce.

Mix the solution of saccharine and glycerine together. Dissolve the Rochelle salts in the infusion of senna and mix all together, adding enough water to make 64 ounces.

Cold Cream Improved.

White wax, pure..... 735 grains.
White vaseline oil..... 1855 grains.
Rose water, triple..... 875 grains.
Borax ..... 35 grains.
Oil of rose ..... 12 minims.
Terpineol ..... 10 minims.

Heat the wax and oil to 75 centigrade and rose water and borax to 80 centigrade; pour together while hot and mix for half a minute. Add the perfume.

Pain Balm.

Acetanilid, powdered..... 16 ounces.
Chloral hydrate ..... 4 ounces.
Gum camphor ..... 1 ounce.
Chloroform ..... 2 ounces.
Alcohol .....192 ounces.
Saccharine ..... 2 drachms.

Mix and dissolve all in the alcohol; add warm water to make up to 512 ounces; color light brown or red.

Mucilage—Cheap.

Dextrin, yellow..... 37½ pounds.
Dextrin, white..... 37½ pounds.
Warm water ..... 9 gallons.

Dissolve by agitation. If the color is too dark, make a decolorizing solution as follows:

Chloride of lime..... 1 pound.
Water ..... 1 gallon.

Let stand several days and decant; add sufficient of this to the mucilage until the right shade is obtained.

Prune Juice.

Good prunes..... 10 pounds.

Simmer in 20 pints of water, strain off the juice, rub out the pulp in a hand sieve and rinse with hot water sufficient to make 2½ gallons. To this add 10 pounds of granulated sugar and one quart of alcohol.

Roach Powder.

Phosphorous amorphous ... ¾ ounce.
Wormwood herb, powdered. 16 ounces.
Capsicum, powdered..... ¼ ounce.

Mix.

Hair Tonic for Baldness.

Quinine hydrochlorate... 1 drachm.
Tannic acid..... 3 drachms.
Resorcin ..... 1 drachm.
Tincture of cantharides.. 2½ ounces.
Oil of rose .....10 drops.
Alcohol ..... 4 ounces.
Dissolve all in the alcohol and add—
Water ..... 1½ ounces.

Hair Tonic—Cheap.

Bay rum ..... 32 ounces.
Quinine hydrochlorate..... 40 grains.
Common salt ..... 2 ounces.
Mix.

Brilliantine.

White vaseline oil..... 6 ounces.
Glycerine ..... 2 ounces.
Oil of bitter almonds..... 6 drops.
Oil of rose ..... 2 drops.

Mix the oils, shake well and add the glycerine. This makes two layers in the bottle.

"Number 100" for Gonorrhoea.

(1) Balsam copaiba..... 3 pints.
(4) Spts. lavender comp.. 3 pints.
(3) Spts. nitre ..... 3 pints.
(7) Oil cubebs..... 1½ ounces.
(6) Turps ..... 6 ounces.
(5) Opium ..... 6 ounces.
Powd. acacia ..... 1½ pounds.
(2) Liq. potassa ..... 1½ pints.
Water ..... 2 pints.

Make two solutions, one containing water and acacia, and the others should be added according to numbers.

New Mexican Sarsaparilla.

Grd. sarsaparilla ..... 6½ pounds.
Grd. licorice rt..... 1½ pounds.
Grd. sassafras bk..... 1½ pound.
Grd. mezereon ..... ¾ pound.
Grd. poke root..... 2½ pounds.
Glycerin ..... 1¼ gallons.
Alcohol ..... 3 gallons.
Water ..... 4 gallons.
Percolate from this 6 gals.
and add syrup..... 3½ gallons.
Iod. potash ..... 3¾ pounds.

Sponges to Bleach.

First.

Permanganate of potash.. ¾ ounce.
Water, filtered ..... 128 ounces.
Make a solution.

Second.

Hyposulphite of soda..... 12 ounces.
Water, filtered .....160 ounces.
Muriatic acid, commercial.. 4 ounces.
Make a solution. Dip the sponges in the first solution; squeeze out the excess moisture, then soak them in the second solution.

Sponges to Bleach—Another Process.

First.

Permanganate of potash.... 1 ounce.
Sulphuric acid, commercial ½ ounce.
Water, filtered.....128 ounces.
Make a solution.

Second.

Oxalic acid ..... 1 ounce.
Common salt ..... 1 ounce.
Water, filtered .....128 ounces.
Make a solution. Proceed as above. A weak solution of picric acid will give sponges a yellowish tinge.

Shoe Dressing Enamel.

Aniline black (nigrosin)... 1 ounce.
Shellac gum ..... 20 ounces.
Gum camphor ..... 1 ounce.
Wood alcohol ..... ½ gallon.

First dissolve the aniline in the alcohol, then dissolve the camphor, add the shellac, and cover the vessel to prevent evaporation; keep in moderately warm place; let stand for 2 or 3 days, shaking occasionally. When all is dissolved, strain through a piece of

dry cheesecloth or mosquito netting. Clean and dry the shoes before applying. Use a clean, dry sponge for applying the enamel and a patent leather gloss will be the result. This polish will keep the shoes glossy for a long time and render them waterproof.

Urona Diuretic.

Lithium benzoate ..... 3 ounces.
Hexamethylenamina ..... 2 ounces.

Thialional Liver and Kidney Salt.

Sodium citrate ..... 15 ounces.
Sodium sulphate anhydrous, 26.6 ..... 7 ounces.
Sodium chloride, 3.3..... ½ ounce.
Lithium citrate anhydrous.. ¼ ounce.

Roosevelt's Colic Cure.

No. 1.

Sal. soda ..... 10 pounds.
Water ..... 4½ gallons.
Alcohol q. s..... 9 gallons.

No. 2.

Gum camphor ..... 2 pounds.
Oil sassafras ..... ½ gallon.
Chloroform ..... 6 pounds.
Turps ..... ½ gallon.
Coal oil q. s..... 9 gallons.

Mix.

Put this up in 10-ounce bottles.

Directions.—Shake well and drench with half the contents of this bottle mixed with equal parts of whiskey or water. After giving the medicine, exercise the animal moderately and drench with half a pound of Epsom salts dissolved in water.

Cod-Liver Oil Emulsion.

Irish moss ..... 1 ounce.
Distilled water ..... 50 ounces.

Boil gently for half an hour, replacing the water that evaporates. Strain without pressure, so as to obtain 45 ounces of liquid. Separately mix—

Powdered tragacanth .... 3 drachms.
Cod-liver oil ..... 50 ounces.
Oil of cinnamon ..... ½ ounce.
Essential oil of almonds.. ½ ounce.

Add to the decoction of Irish moss with—

Glycerin ..... 5 ounces.

Shake thoroughly to form an emulsion.

Hive Syrup and Eucalyptus.

Fluid extract squills..... 4 ounces.
Fluid extract of senega..... 4 ounces.
Fluid extract of lobelia.... 1 ounce.
Tartar emetic .....128 grains.
Dissolve in water..... 4 ounces.
Eucalyptol ..... ¼ ounce.
Dissolve in alcohol..... 55 ounces.
Simple syrup ..... 64 ounces.

Celery Compound.

Fluid extract of celery..... 16 ounces.
Fluid extract coca..... 8 ounces.
Fluid extract kola..... 16 ounces.
Fluid extra black haw..... 8 ounces.
Alcohol ..... 32 ounces.
Aromatic elixir to make... 2 gallons.

Anti-Pain Tablets or Powder.

Acataniiid, powdered..... 12½ ounces.
Caffein alkaloid ..... ½ ounce.
Soda bicarb. ..... 11¼ ounces.
Acid tartaric ..... ¾ ounce.

Mix well. This is a good preparation and cheap.

For Ingrowing Toe Nails.

Cocaine hydrochlorate .. 10 grains.
Tincture muriate of iron. ½ ounce.
Collodion ..... ½ ounce.

Mix. Apply to affected part and when the flesh is contracted soak the foot and trim the nail.

Anti-Pain Tablets or Powder.

Acetanilid ..... 55 ounces.
Soda bicarbonate ..... 43 ounces.
Tartaric acid ..... 2 ounces.

100

This is very inexpensive, but a dose of it will be as effective as the headache preparations sold at $1.00 per ounce. Try it.

Fluid Extract Pinus Canadensis.

Ground hemlock bark, 2 pounds; alcohol, 1 part; water, 2 parts, q. s. to obtain a percolate of 2 pints.

Evaporate down to 18 ounces and add glycerine q. s. to make 32 ounces.

Brazilian Furniture Cleanser and Polisher.

Turpentine copal varnish..... 1 pint.
Boiled linseed oil..... 2 pints.
Coal oil ..... 2 pints.

Mix. This is a good furniture cleanser and will make old furniture look like new.

Etching Glass with Rubber Stamp.

Sodium fluoride..... 1 ounce.
Glacial acetic acid.....10 drachms.
Water .....10 ounces.

Dissolve the sodium fluoride in the water, triturate the solution with a sufficiency of barium sulphate to make a smooth creamy mixture, finally add the acetic acid and bottle in gutta percha bottles or glass bottles coated on the inside with paraffin.

Spirits of Lavender Compound.

Oil of lavender..... 2 drachms.
Oil of rosemary..... ½ drachm.
Oil of cinnamon..... ½ drachm.
Oil of cloves..... 5 drops.
Nutmegs .....10 drops.
Alcohol .....12 ounces.
Water .....12 ounces.
Color red.

Essence of Pepsin.

Scale pepsin, 2 ounces and.149 grains.
Acid muriatic, dilute, 5 ounces and..... 80 minims.
Angelica wine..... 32 ounces.
Simple syrup..... 8 ounces.
Sherry wine, to make.....128 ounces.

Essence of pepsin..... 2 grains.

Double the above amount of scale pepsin.

Terramentholine.

China clay (Kaolin).... 3½ pounds.
Glycerine ..... 2½ pounds
Boric acid..... 1½ ounces.
Menthol .....10 grains.
Salicylic acid.....80 grains.
Oil of peppermint..... 2 drops.
Oil wintergreen..... ½ drachm.
Oil eucalyptus..... ¼ drachm.
Water, to make paste..... q. s.

Glycerole of Pepsin.

Scale pepsin.....12 ounces.
Glycerine .....56 fl. ounces.
Water .....72 ounces.
Hydrochloric acid..... 1½ ounces.

Mix the pepsin with 48 ounces of water and the hydrochloric acid and dissolve. Add glycerine and remainder of water.

Elixir Morphine.

Morphine sulphate.....128 grains.
Simple elixir..... 6 pints.
Water ..... 1 pint.
Port wine..... 1 pint.
Sugar coloring, q. s.
Mix.

Wart Mixture.

Chloral hydrate..... 3 drachms.
Acetic acid, strong..... 3 drachms.

Salicylic acid..... 3 drachms.
Sulphuric ether..... 2 drachms.
Collodion ..... 1 ounce.

Add the choral hydrate and salicylic acid to the acetic acid; add the sulphuric ether to the collodion and shake. Mix the two. Apply to warts twice a day.

Tape Worm (Ritter).

Podophyllin .....1 grain.
Male fern oleoresin.....1½ drachms.
Fluid extract kamala.....3 drachms.
Spirit of chloroform.....1 drachm.
Acacia mucilage.....1 ounce.
Peppermint water.....3 ounces.

Make an emulsion, take in three equal doses at intervals of half an hour. A purgative should be taken the preceding evening. When the bowels are well emptied. Take the above.

Worm Tea.

Pink root.....2 ounces.
Senna leaves.....1½ ounces.
Star aniseed..... ½ ounce.
Boiling water..... ½ gallon.

Infuse for 1½ hours.

Dose.—1 to 2 tablespoonfuls every 3 hours.

Soap Perfume.

Tincture of musk.....16 ounces.
Oil of bergamot..... 4 ounces.
Oil of petitgrain..... 4 ounces.
Oil of sweet orange..... 4 ounces.
Oil of rose geranium..... 2 drachms.
Oil of lemon grass..... 1 drachm.
Oil of sandlewood..... 4 ounces.

To make tincture of musk ½ ounce artificial musk to 1 gallon deodorized alcohol, known to the trade as cologne spirits.

Pain Anodyne.

Chloral hydrate..... 1 ounce.
Tincture opium..... 3½ ounces.
Spirits camphor..... 1 ounce.
Oil cassia.....30 drops.
Oil Peppermint.....15 drops.
Alcohol to make.....14 ounces.
Water added slowly..... 2 ounces.

Color with tincture saunders, red, or other non poisonous color.

Chronic Gastritis (Wolf).

Sulphate of soda, powd...1 ounce.
Chloride of soda, powd...1 ounce.
Carbonate of soda, powd.. ¾ ounce.
Borate of soda, powd....2½ drachms.
Sulphate of potash.....1 drachm.

Mix.

Take half a teaspoonful in lukewarm water three times a day, before breakfast, and two hours before the midday and evening meals.

Tasteless Solution Sulphate of Magnesia.

Sulphate magnesia..... 1 ounce.
Saccharin .....10 grains.
Water ..... 1 pint.
Coffee ..... 2½ drachms.

Boil 2 minutes, let draw for 10 minutes and strain.

Wild Cherry Phosphate.

German wild cherry juice.. 1 pint.
Syrup of wild cherries..... 1 pint.
Solution of acid phosphate..½ pint.
Simple syrup..... 1 quart.
Alcohol ..... 1 ounce.
Oil of bitter almonds..... 8 drops.
Water .....72 ounces.
Burnt Sugar coloring.....¼ ounce.

Dissolve the oil in the alcohol and add to the other ingredients.

Pharaoh's Serpents.

Sulphocyanide of mercury.½ ounce.
Ferrocyanide of iron.....10 grains.
Tragacanth powder comp.½ drachm.

Mix thoroughly, make into a mass with water divide into forty parts, shape into cones or rolls and dry (poisonous).

Soldering Fluid.

Muriatic acid commercial...2 ounces.

Zinc scraps enough to neutralize, muriate of ammonia commercial 1 drachm to each fluid ounce. Filter through cotton.

Clean the article to be soldered with emery or fine sand paper and sprinkle with powdered rosin.

Hoff's Consumption Cure.

Arsenious acid..... 4 grains.
Carbonate of potash..... 8 grains.
Cinnamic acid.....12 grains.
Water ..... 2 ounces.

Dissolve in a flask with the aid of heat. Add.

Alcohol .....¾ ounce.
Extract of opium aqueous..12 drops.

Dose.—Commence with 6 drops increase dose 1 drop every 3 days until 21 drops are being administered, give the 21 drops for 3 days—then drop back to 10 drops and do as before.

Ink Stains to Remove.

No. 1.

Citric acid..... 2 ounces.
Water .....16 ounces.
Saturated solution of
borax ..... 3½ ounces.

No. 2.

Chlorinated lime..... 6 ounces.
Water .....16 ounces.
Saturated solution of
borax ..... 3½ ounces.

Mix the chlorinated lime and water shake well, set aside for a week in a well stoppered bottle, decant the clear liquid and add the borax solution. This is used by saturating the ink spot with solution No. 1, removing excess of liquids with a blotter and then applying No. 2. When the stain has disappeared apply the blotter and wash the spot by the alternate use of clear water and blotting paper. This will injure the gloss of a high finished paper, but the gloss may be partially restored by burnishing with a piece of smooth bone or ivory.

Acid Phosphate Baking Powder without Alum.

Special phosphate.....50 pounds.
Granular bicarb, soda.....25 pounds.
Starch .....25 pounds.

In order to insure best keeping qualities, it is necessary to use granular soda and the starch should be dried as you are aware the starch of commerce contains about 12 per cent of moisture, and at least 7 per cent should be driven off in drying.

This special phosphate is made by Provident Chemical Works, Saint Louis, Missouri.

Salad Dressing.

Salt ..... 1½ ounces.
Sugar ..... 1 ounce.
Salad oil..... 2 ounces.
Eggs ..... 2 ounces.
Acamulsia ..... 1 ounce.

(Emulsify and add)

Tr. capsicum.....20 drops.
Mustard ..... 1½ ounces.
Malt vinegar..... 6 ounces.

Mix.

Chewing Gum.

Spruce.

Spruce gum.....20 parts.
Chicle .....20 parts.
Sugar powd.....60 parts.

Melt the gum separately, mix while hot and immediately add the sugar, a

small portion at a time, kneading it thoroughly on a hot slab.

When completely incorporated remove to a cold slab, previously dusted with powdered sugar, roll out at once into sheets and cut into sticks.

Any desired flavor or color may be added to or incorporated with sugar.

Note.—Fresh cream and powdered guarana or kola are also largely used in the manufacture of chewing gum.

Pepsin Chewing Gum.

Gum chicle	3½ pounds.
Paraffin wax	1 pound.
Balsam tolu	2 ounces.
Balsam peru	1 ounce.
Powdered pepsin	1 ounce.

Dissolve the gum in as much water at it will take up, melt the paraffin and mix all together.

Now take;

Sugar, granulated	10 pounds.
Glucose	4 pounds.
Water	3 pints.

Put the sugar and glucose with the water, dissolve and boil them up to crack degree and pour the syrup upon an oiled slab, and turn into it sufficient of the above mixture to make tough and plastic.

Creme Dentifrice Paste.

Precipitated Chalk	22 ounce.
Powd. castile soap	4 ounces.
Powd. orris root	6 ounces.
Oil eucalyptus	1 dram.
Oil peppermint	20 drops.
Oil Cinnamon	20 drops.
Saccharin	15 grains.
Dissolved in alcohol	1 ounce.
Color, rose pink q. s. or	1 ounce.
Glycerine	11 ounces.
Water	3 ounces.

q. s. to make a thick paste.

Anodyne.

Chloral hydrate	1 ounce.
Dissolve in Alcohol	6 ounces.
Add spirits camphor	1 ounce.
Tr. opium	3½ ounces.
Oil cassia	30 drops.
Oil peppermint	15 drops.
Alcohol q. s. to make	14 ounces.
Water, added slowly	2 ounces.

Color with tincture Red Saunders or other non-poisonous coloring.

Transparent castile soap	½ ounce.
Saffron	½ dram.

Egg Shampoo.

Transparent castile soap	½ ounce.
Saffron	½ dram.

Water a sufficiency.

Shave the soap fine and boil it and the saffron in a quart of water.

When the soap is dissolved strain and add when cold the following solutions:

Oil Lavender	40 minims.
Oil Cloves	10 minims.
Otto of Rose	15 minims.
Oil of Bergamot	15 minims.
Essence of Musk	1 dram.
Rectified spirits	20 ounces.

Make up the julep to 1 gallon with water.

Cockroach Exterminator.

Amorphous phosphorous	1 pound.
Paris green	1 pound.
Powd. wormwood herb	16 pounds.
Sabadilla	1 pound.

Mix well and sprinkle in their haunts.

Roach Paste.

Glucose	1 pint.
Powdered red lead	2 ounces.

Mix well.

Bug Annihilator.

Gasoline..... 1 pint.
Napthaline..... 1 ounce.

Dissolve.—Color with aniline red soluble in oil or alkanet root.

Ko-Ko Fruita.

Fl. Ex. coca miscible..... 8 ounces.
Fl. Ex. kola miscible..... 6 ounces.
Fl. Ex. gentian..... 2 ounces.
Ess. of vanilla..... 4 ounces.
Ess. of rose..... 4 ounces.
Solution of citric acid or solution of acid phosphate 8 ounces.
Caramel..... 6 ounces.
Simple syrup q. s. to make. 128 ounces.

Starch Gloss Solid.

French chalk..... 3 ounces.
Pwd. white soap..... 1 ounce.

Mix.

Directions.—Take a piece of dry flannel and dip it into the glaze powder rub it well over the right side of the starched article, then proceed to iron in the usual way, when a beautiful gloss will be obtained.

Put in a little borax to give stiffness as usual.

Starch Gloss Liquid.

Spermaceti ..... 1 ounce.
Gum arabic..... 1 ounce.
Borax ..... 1 ounce.
Glycerine ..... 2½ ounces.
Water .....14½ ounces.

Boil half the water and add the borax and spermaceti to it. Separately dissolve the gum in the remainder of the water and the glycerine. Strain and mix thoroughly with the warm mixture.

This is a good gloss for cold water starch, a wineglassful of it is used with 4 ounces of dry starch or say tablespoonful to a heaped tablespoonful of starch.

Starch Gloss.

No. 2.

Glycerine .....2 ounces.
Spirit of turpentine.....2 ounces.
Borax .....2 ounces.
Cold-water starch.....1 pound.
Water .....6 pints.

Rub down the starch with water to a smooth paste, then add the rest of the water in which the borax has been dissolved.

Add the glycerine and turpentine last.

This receipt is a domestic one, and the mixture is excellent for cold-water starching.

Epicurean Sauce.

Indian Soy.....2 ounces.
Walnut catsup
Mushroom catsup of each..8 ounces.
Port wine.....2 ounces.
White pepper pwd..... ½ ounce.
Shallots .....3 ounces.
Cayenne ..... ½ ounce.
Cloves ..... ½ ounce.

Macerate 14 days in a warm place, strain and add White wine Vinegar q. s. to make 16 ounces.

Chocolate Coating.

Pure chocolate.....1 pound.
White wax.....3 ounces.
Chocolate brown color
Cochineal of each q. s.

Put the chocolate in a saucepan, stand on the furnace plate or near a fire; break up the wax into little pieces and stir it in until all is melted; then add the brown color with a little liquid cochineal, stirring the whole till thoroughly mixed; it is then ready for use.

For cheap, common goods more wax may be used. When mixing in the coloring try a little on a piece of white paper until satisfied with the blend.

Missouri Diarrhoea Cordial.

2—Gum camphor	10	ounces.
8—Extract logwood	2½	pounds.
3—Oil peppermint	2½	ounces.
5—Tr. rhatany	2½	pints.
6—Tr. nutgalls	5	pints.
7—Tr. Opium	5	pints.
1—Alcohol	8	gallons.
9—Sugar	80	pounds.
4—Water	12	gallons

Mix in numerical order.

Mexican Tamalas.

Take clean white inside corn shucks. Soak one night in warm water. Take one gallon white corn, add three ounces of slaked lime; enough water to cover; boil two hours until corn is soft, then wash the grains in clear water and rub off the husks from the grains. Grind and mash to a thick pasty dough, adding salt to taste. This is the mass.

Take either fresh lean pork, or if preferred, chicken meat, 3 or 4 pounds, boil until done, preserving the flavor in the meat. Take off; chop and grind to a fine pulp. Take of genuine Mexican chili pods, 6 ounces, put into hot water until soft, remove stems, seeds and scrape the soft chili out of the skin. Add 2 ounces ground oregano, (sweet marjoram); 1 ounce ground cloves; stir together and mix well with the meat, making a paste. This is the filling.

Take one of the shucks and spread out on a clean, smooth surface, cover all of the big end of the shuck to about two-thirds up, (leaving one-third of the small end empty), with a layer of the "mass", above mentioned. Put upon the mass nearly a tablespoonful of the prepared filling. Roll sidewise, like making a cigarette, and turn down the empty end of the shuck to hold in the contents. Lay the tamalas carefully into a steamer and steam well for two hours. Serve hot.

Note—Tamalas after steaming may be packed, like sardines, in small tins, with directions to the consumer to heat the tin in water before opening to serve. The proportions in receipt may of course be varied to taste, by the chef.

Chili-Con-Carni.

Take lean beef, cut into small pieces like dice. Wash, add salt and stew. When done, skim off the fat, make a chili sauce of chili, oregano, etc., like in the tamala recipe. Add this to the meat and stew until the sauce is well stewed into the meat. If necessary, add a little water while stewing but not much. It is better rather thick. Serve hot. Proportions of this recipe will be regulated by the chief cook. This may be packed for sale in tin cans.

Imperialist Sauce.

Tomato Catsup	7	gallons.
Worcestershire sauce	7	gallons.
Mixed mustard	4	gallons.
California sherry	2	gallons.
Molasses (treacle)	2	gallons.
Oil of garlic	½	drachm.
Dissolved in alcohol (s. v. r.)	8	ounces.

Coloring to suit.

This is a good article and will prove acceptable to the public. It may be christened Porto Rico, San Juan, Manillino, Fillippino, Omdurman, Kitchener's Superlative, Sirdar, Tartar or any suitable name, either real or fanciful, that may suggest itself.

The gallon to be used in the above formula is the gallon of 128 ounces. (British compounders will please figure this out accordingly.)

Paragon Stick Blue.

Soluble Blue.....8 pounds.
Powd. borax.....4 pounds.
Yellow Dextrine.....4 pounds.
Oxalic acid.....1½ pounds.
Gum senegal.....2 pounds.

Dissolve the gum in sufficient hot water to make the whole into a thick paste. Before mixing, run all the ingredients through a fine sieve.

Cheap Stick Blue.

Soluble Blue.....4 pounds.
Common Salt.....4 pounds.
Yellow Dextrine.....4 pounds.
Borax .....4 pounds.
Gum senegal.....2 pounds.
Oxalic acid.....1½ pounds.
Water .....q. s.

Mix same as above.

Crab-Apple.

Tuberose .....32 ounces.
Violet xx.....16 ounces.
Oil of lilac muguet..... ½ dram.
Hyacinth geraniol..... 1½ dram.
Tincture musk..... 4 ounces.

Violet XX.

Ionone ..... 1 ounce.
Rose from concentrates.....24 ounces.
Cassie from concentrates...24 ounces.
Coumarin ..... 2 drams.
Vanillin ..... 1 dram.
Civette Tinct..... 4 ounces.
Cologne spirits to make.... 1 gallon.
Green color.....q. s.

Violet XXX.

Double the ionone, cassie, coumarin, rose, and vanillin to cologne spirits 1 gal.

Hyacinth Geraniol is sold by Fritzsche Bros, 37 Barclay St., N. Y. City.

Dr. Laird Pearson's Treatment for

Dandruff.

No. 1 Lotion.

Mercury perchloride.....30 grains.
Glycerine ..... 5 ounces.
Cologne water..... 5 ounces.
Water q. s. to make.....15 ounces.

No. 2 Lotion.

Beta-naphthol ..... 2 drams.
Alcohol .....20 ounces.

Dissolve.

Oily Application.

Salicylic acid.....2 drams.
Tr. benzoin comp.....1½ drams.

Olive oil q. s. to make 10 ounces mix.

Wash the hair with tar soap, rinse well, and dry with a rough towel. Rub in some No. 1 lotion, and again dry.

Next apply No. 2 lotion and allow it to dry spontaneously. Dress with the oily application and brush. This treatment should be carried out daily for a month, and then every alternate day for a fortnight. The dandruff disappears in a few days and the hair becomes vigorous and supple in a remarkably short time.

Carnation Pink.

Tinct. rose..... 4 pints.
Jasmin ..... 4 pints.
Oil lilac..... 1 dram.
Heliotropol ..... 1 dram.
Oeillet ..... 1 ounce.
Oil bergamot..... 1 dram.
Oil cloves..... 1 dram.

This makes a good product. The heliotropol oeillet, oil lilac, I buy of Ungerer, N. Y.

Ball Bluing.

Superfine ultramarine.....4 ounces.
Ordinary ultramarine.....2 ounces.

Sodium carbonate.....4 ounces.
Glucose .....9 drams.

Mix and make into a stiff paste by the aid of water, roll out into a thick sheet and cut into balls or cubes, dry at a gentle heat.

Birch Beer Extract.

Oil wintergreen..... 6 fl. ounces.
Oil sassafras..... 1 fl. ounces.
Oil lemon..... 1 fl. ounce.
Oil cassia.....20 minims.
Catechu ..... 2 drams.
Carbonate of magnesium. 6 av. ounces.
Burnt sugar coloring.... 4 fl. ounces.
Alcohol ..... 9 pints.
Water q. s. or..... 8 pints.

Dissolve the Oils, in the alcohol, rub the carbonate of magnesia with the water, add the caramel and catechu and the mixture to the solution, let stand several days, with occasional agitation, then filter.

This soluble extract is much used by bottlers, and for flavoring soda water syrup.

Peanut Butter.

Take eight pounds of roasted peanuts grind in a mill to break up the shells and to rub off the red skins, it will separate the kernels into halves; then with wind mill blow away the shells. Add to the kernels, all the fine salt that will adhere, and then pass them through the mill, grinding to a very fine smooth, soft, oily, tough, delicious, yellow, butter, that will spread on crackers, bread, etc. You have now five pounds of nut butter that contains more nutriment, than ten pounds of cow butter, which would cost much more. Mills for this purpose, are sold by A. W. Straub & Co., Philadelphia, Pa.

Powder Weed Killer.

Powdered arsenic ..... 1 pound.
Powdered soda ash..... 2 pounds.
Powdered blue aniline.....¼ ounce.
Mix.

Directions.—Dissolve two ounces of the powder in a quart of water by boiling, and then dilute to a gallon.

Stomach Bitters.

Orange peel, rough ground.. 2 pounds.
Ginger jamaica .....¼ pound.
Oil orange .....½ ounce.
Oil coriander .....½ ounce.
Oil lemon .....½ ounce.
Cologne spirits, 188 per cent. 6 gallons.
Water .....12 gallons.
Saccharin .....30 grains.
Syrup .....¾ gallon.
Sugar coloring ..... 2 ounces.

Macerate the drugs for one week in covered jar with a mixture of 2 gallons of the spirits and 2 gallons of the water.

Then mix the remainder of the spirits and water and percolate the whole.

Cure for Chills and Fever.

(Dr. Jackson's.)

Acetanilid ..... 5 grains.
Pilocarpine ..... 1-20 grain.
Nitroglycerin ..... 1-100 grain.
Arsenite of strychnia... 1-64 grain.
For one dose.

Chlorodyne.

Morphia muriate ..... 10 ounces.
Tr. cannabis indica..... 10 pints.
Chloroform ..... 10 pints.
Tr. capsici ..... 5 ounces.
Hydrocyanic acid Dil..... 3 ounces.
Glycerine ..... 2 gallons.
Alcohol ..... 8 gallons.
Oil peppermint ..... 5 ounces.

Dissolve morphine and add acid last; color with green sugar color.

Soluble Lemon.

Oil lemon ..... ¾ ounce.
Cologne spirits ..... 10 ounces.
Water ..... 9 ounces.
Magnesia ..... q. s.

Combine oil and alcohol; stand 48 hours; add magnesia; heat water 100 degrees (not over); turn very slowly in the first mixture, stirring well; filter.

Fly Lotion.

To prevent insects annoying cattle is made as follows:

Black pepper ..... 8 ounces.
Quassia chips ..... 8 ounces.
Pennyroyal herb ..... 4 ounces.

Boil in one gallon of water for 20 minutes and strain.

Anaphrodisiac Pills.

Camphor ..... 3 grains.
Lactucarium .....¼ grain.
Guarana .....½ grain.
Extract belladonna .....¼ grain.
Denarcotized opium.....¼ grain.

To make one pill.

Essence of Calisaya.

Quinine muriate...2 oz. 25 grs. Troy.
Cologne spirits..... 26 2-3 pints.
Cinchonine sulph..1 oz. 12½ grs. Troy
Cinchonidine .....1 oz. 12½ grs. Troy.
Sugar, granulated ..... 40 pounds.
Oil bitter almonds..... 30 minims.
Oil cassia ..... 34 minims.
Oil neroli ..... 40 minims.
Tincture of vanilla.....10 fl. ounces.
Tincture of cudbear....2 ozs. 260 mins.
Caramel ..... 2 fl. ozs. or q. s.

Water enough to make 10 gallons (128 ounces each).

Blue Black Ink.

Blue blue aniline powder. 90 grains.
Tannin Ink Body No. 2.. 16 fl. ounces.
Dist. water ..... 25 fl. ounces.
Carbolic acid ..... 20 minims.
Sugar ..... 40 grains.

Dissolve the blue dye and sugar in water, by the aid of heat; add the remaining ingredients; transfer the mixture to a bottle; tie over the latter's neck a piece of paper; set aside in a cool place for a week and decant the clear liquid from the trifling precipitate.

Tannin Ink Body No. 2.

Tannic acid ..... 3½ av. ounces.
Sol. chlor. iron, U. S. P. 4 fl. ounces.
Muriatic acid com..... 2¼ fl. drams.
Water q. s. ad.....32 ounces.

Mix the two acids, the solution and 7 fluid ounces of water in a large size flask (quart) on a water bath, at a temperature of 80-90 degrees C. for a period of 10 hours. Then add 20 fluid ounces of hot water, continue the heat for another hour, transfer to a bottle, cork well, set in a cool place for 2 week, filter and add through the filter enough water to make 32 ounces.

Remarks.—This blue blue aniline powder is manufactured by Kuttroff, Pickhardt & Company, New York City.

It is very necessary to use this in order to obtain good results, as ordinary blue aniline will not do. Either the crystals or powder can be used but prefer latter.

Root Beer Essence.

Oil of sassafras ..... 1 ounce.
Oil of wintergreen.....¾ ounce.
Oil of anise .....⅜ ounce.
Oil of cloves .....⅛ ounces.
Alcohol ..... 3¾ ounces.
Water ..... 4 ounces.
Caramel ..... 6 ounces.
If bitterness is needed add
Tincture quassia ..... 1 ounce.

La Grippe Cure.

Quinine ..... 24 grains.
Salol ..... 24 grains.

Acetanilid ..... 24 grains.
Soda bicarb ..... 24 grains.

Fill into 32 capsules. Dose: 2 capcules three times a day.

Worm Tea.

Senna leaves ..... 1½ ounces.
Pink root ..... 2 ounces.
Star aniseed..... ½ ounce.
Water, boiling ..... ½ gallon.

Infuse for one and one-half hours. Dose: One to two tablespoonfuls three hours apart.

Model Headache Powder.

Acetanilid, powdered ....12 pounds.
Salicylate soda ..... 1 pound.
Bicarb. soda ..... 3 pounds.
Rochelle salts ..... 4 pounds.
Caffeine alkaloid ..... 2 ounces.
Saccharin (550) ..... 5 drachms.

Mix well.

Color with powdered cocoa if a colored powder is desired.

Bergoline.

Paraffine wax, soft..... 1 ounce.
(melting point, 105 degrees.)
Inodorous liquid petroleum oil ..... 9 ounces.

Bergoline, alboline, glymol, vaseline, saxolin, fatoline, etc., are a few of the pet names of the above mentioned oil.

Orange Wine.

(Fermented.)

Lump sugar ..... 23 pounds.
Water ..... 12½ gallons.

Dissolve the sugar by boiling and skim carefully. Pour the boiling syrup on the rinds of 100 oranges, add the juice of the fruit and allow to stand over night. Add 6 ounces of yeast, ferment for three days at a temperature of 65 to 70 degrees F., then strain into a barrel and bung loosely. Add 4 pints of alcohol, mix and add three ounces sherry finings. Let stand four months and rack off bright.

Where the addition of the above amount of alcohol is objected to, 5 grains salicylic acid should be added to each pint of wine. The salicylic acid should be previously dissolved in a small quantity of alcohol.

Orange Wine.

(Unfermented.)

Oil of orange ..... 1 dram.
Tincture of orange peel.... 8 ounces.
Alcohol ..... 4 ounces.
Tartaric acid ..... 8 ounces.
Salicylic acid ..... 3 drams.
Lump sugar ..... 6 pounds.
Caramel .....3 ounces.
Water .....10 gallons.

Dissolve the oil of orange in alcohol and pour upon the sugar contained in a large funnel. Pass through this a sufficiency of the water to dissolve, add the rest of the water containing the tartaric acid, then the caramel and finally the tincture of orange in which the salicylic acid has been previously dissolved; add two ounces sherry finings, mix well and add ½ gallon alcohol. Set aside for two weeks and rack off clear.

Ginger Wine.

Lump sugar ..... 18 pounds.
Water ..... 7½ gallons.
Rinds of seven lemons.
Rinds of four oranges.
Bruised jam, ginger (rough ground ..... ½ pound.
Raisins, cut..... ¼ pound.

Boil the ginger, raisins, lemon and orange rinds and sugar in the water for an hour. Skim and pour into a clean 10-gallon keg. Next day add the juice of the lemon and oranges and 4 ounces sherry finings. Strain and add

two tablespoonfuls of yeast. Ferment three days and bung up the keg. Let stand for six weeks, rack off bright contents into another keg, add a pint of alcohol and let stand one month and bottle. Use good fruit and best Jamaica ginger.—Pharmaceutical Formulas C. & D., London, modified.

In the three preceding formulas for wines, the gallon is 128 ounces, American measure.

Weed Killers.

No. 1.

Arsenic ..... 3 pounds.
Muriatic acid, commercial. 1¼ gallons.
Water ..... 1¼ gallons.

Boil in an enameled iron pan until dissolved; make up to five gallons with water, and add 5 grains aniline blue to color.

No. 2.

Arsenic ..... 4 pounds.
Caustic soda, 70 per cent.... 4 pounds.
Water ..... 5 gallons.

Boil until the arsenic is dissolved and add two ounces sulph. copper to color.

No. 3.

Muriatic acid, commercial.... 2 pints.
Water ..... 3 pints.
Aniline blue ..... 3 grains.

Directions.—One pint of either of the above solutions to two gallons of water and apply freely to the weeds.

Ink Remover.

No. 1.

Citric acid ..... 1 av. ounce.
Water ..... 3 fl. ounces.

Dissolve the acid in the water.

No. 2.

Chloride of Lime..... 6 av. ounces
Carbonate of soda (sal. soda) ..... 1½ av. ounces.
Distilled water .....10 av. ounces.

Dissolve the soda in 2½ ounces of the water and set aside.

Rub up the chloride of lime with 7½ ounces of water and filter.

Mix the two solutions and filter. Keep well corked.

Or Labarraque's solution of chlorinated soda may be used.

This composition is used by saturating the ink spot with solution No. 1, removing excess of liquid with a blotter, and then applying No. 2. When the stain has disappeared, apply the blotter, and wash the spot by the alternate use of clear water and blotting paper. This will destroy the gloss of a high finished paper, but it may often be partially restored, when the paper is dry by burnishing with a piece of smooth bone or ivory.

Essence of Pepsin.

Soluble scale pepsin (1 to 3.000) ..... 2 ounces.
Hydrochloric acid ..... 1 ounce.
Simple elixir ..... 64 ounces.
Glycerine ..... 16 ounces.
Angelica wine (sweet) .... 32 ounces.
Water ..... 32 ounces.
Spirits of cardamom (4 drops of oil to 1 oz. spirits). 1 ounce.

Directions.—Dissolve the pepsin in the water with the aid of the hydrochloric acid; add the glycerine, simple elixir, Angelica wine and spirits of cardamom in the order named.

Fl. Extract Cascara Sagrada.

Cascara sagrada bark..... 1 pound.
Boiling water (enough to exhaust, say)..... 4½ pints.

Evaporate down to 12 fluid ounces and add 4 ounces of alcohol.

Fluid Extract of Cascara Aromatic.

Cascara sagrada ..... 10 pounds.
Calcined magnesia ..... 1 pound.
Licorice root ..... 3 pounds.
Aqua ammonia, 10 per ct.. 7 ounces.

Oil of wintergreen..... 30 minims.
Oil of anise..... 40 minims.
Oil of coriander ..... 15 minims.
Oil of cassia ..... 15 minims.
Alcohol ..... 40 ounces.
Saccharin .....175 grains.
Sugar house syrup..... 8 ounces.

Directions.—Macerate the cascara (previously mixed with the calcined magnesia), with 6 gallons of boiling water and percolate; evaporate down until of a syrupy consistence. Macerate the licorice with 2 gallons of water and the 7 ounces of aqua ammonia; boil down and strain. Dissolve the oils and saccharin in the alcohol; add the licorice; let settle and decant off; add the cascara and let settle again; add the remainder of the ingredients. The above makes two gallons of finished product.

Brazilian Polish.

For cleansing and polishing furniture.

Turpentine copal varnish..... 1 pint.
Boiled linseed oil ..... 2 pints.
Coal oil ..... 2 pints.
Mix.

Syrup of Phos. Mur. of Quinine.

Solution of acid phosphate. 9 ounces.
Hypophosphite of potash. 224 grains.
Hypophosphite of calcium 96 grains.
Quinine muriate ..... 32 grains.
Strychnia ..... 1⅛ grains.
Hypophosphite of iron...128 grains.
Simple syrup q. s. to make.128 ounces.
Spirit of bitter almond... 15 drops.
Caramel q. s. to color.

Oil, Butter and Cheese Coloring.

Will not color the buttermilk.

Orange aniline (soluble in oil) ..... 1 drachm.
Olive oil, sweet oil or cottonseed oil .....20 ounces.

Dissolve the orange aniline in the oil by the aid of gentle heat from a water bath. One teaspoonful will be sufficient for about ten gallons of cream.

Compd. Aletris Cordial.

Helonias, powdered..... 8 ounces.
Coca leaves, powdered..... 2 ounces.
Squaw vine, powdered..... 1 ounce.
High cranberry, powdered.. 1 ounce.

Percolate with proof spirits until product measures 24 ounces; to the above add 1 ounce aromatic elixir flavoring and enough sherry wine to make up five pints; color q. s.

Essence of Smoke.

Rect. spirit of tar..... 2 ounces.
Wood alcohol ..... 4 ounces.

Mix and add to crude pyroligneous acid, 20 ounces, shake and filter through a filter wetted with the acid.

Embalming Fluid.

Wickersheimer's Preserving Fluid.—According to the Boston Journal of Chemistry, the following is said to be the formula now adopted by prominent manufacturers in Berlin for this liquid, according as it is to be used for injecting or immersing bodies:

	For injecting.	For immersing.
Arsenious acid	16 grm.	12 grm.
Sodium chloride ...	80 grm.	60 grm.
Potassium sulphate	200 grm.	150 grm.
Potassium nitrate ..	25 grm.	18 grm.
Potassium carbonate	10 grm.	15 grm.
Water	20 lit.	10 lit.
Glycerine	4 lit.	4 lit.
Formaline sol., 40 per cent	¾ lit.	¾ lit.

Hager suggests the following as a substitute for Wickersheimer's preparation:

Salicylic acid	4	drams.
Boracic acid	5	drams.
Potassium carbonate	1	dram.
Dissolve in hot water	12½	ounces.
Glycerine	5	ounces.
Then add—		
Oil cinnamon	3	drams.
Oil cloves	3	drams.
Dissolved in alcohol	12½	ounces.

The latter fluid is not poisonous, and possesses the desirable property of acting an an antiseptic, and also as a preventive and exterminator of moths and vermin, and is possessed of a pleasant odor. The borosalicylate may be used in connection with other solvents if desired.

Whipped Cream.

Take 16 ounces of fresh sweet cream which has been on the ice for at least half an hour (or long enough to become chilled); add one heaping tablespoonful of pulverized sugar and one large spoonful of gelatin (previously dissolved in 2 fluid ounces of water); whip slowly for a minute or two until heavy froth gathers on top. Skim off the dense froth and put in a container for counter use; continue thus whipping and skimming until the desired quantity of whipped cream is obtained, then strain off carefully what little fluid cream has accumulated, as it is ready for use.

The whipping may be done by means of a cream-whipper or egg-beater.

Cream should never be mixed with milk, as a mixture of the two does not whip well. The cream may be replaced by condensed milk or cream with water, adding one of the foam preparation, like white of egg, isinglass or gelatin.

Keep the vessel surrounded by cracked ice during whipping.

This is used for topping various fancy drinks and is also used on very many hot soda drinks.

It is kept in a special container or bowl, which should be kept on ice, and is served from it with a spoon.

It should be made fresh every day.

For Whipped Cream Syrup various formulas have been offered, as follows:

Frosted Cream.

Vanilla extract	2	fl. ounces.
Caramel	1	av. ounce.
Tincture of quillaia	15	fl. ounces.
Gelatin solution	1	gallon.
Syrup	1	gallon.
Water	5	gallons.

Introduce this mixture into a 10-gallon fountain and charge with carbonic acid gas to 90, 100 or 125 pounds (usually 100).

Gelatin solution consists of Cox's or other good gelatin, 3 ounces, and water, 1 gallon.

The caramel may be omitted.

The preparation can be made with sufficient water to dissolve gelatin and be ready for use as required. When needed the mixture may be introduced into a fountain, enough water added and the whole charged. Such mixture may be known as "Whipped Cream Syrup." For gallons use 128 ounces.

Frosted Cream—Continued.

No. 2.

Glycerin	8	fl. ounces.
Sugar	3½	av. pounds.
Water	1	gallon.
Whites of 6 eggs.		

Dissolve the sugar in the water, add the glycerin, beat the egg-white to froth; add to the foregoing; introduce the whole into a fountain containing 5 gallons of water, and charge the whole as before.

No. 3.

Cox's gelatin	2½ boxes.
Whites of 10 eggs.	
Syrup	½ gallon.

Orange essence .....1 fl. ounce.
Water ..... 9½ gallons.

Dissolve the gelatin in some of the water by the aid of heat; beat the egg-white thoroughly, add to the gelatin; add the syrup and extract; introduce this mixture and the remainder of the water into the fountain and charge as before.

No. 4.

Gelatin ..... 4 av. ounces.
Whites of 8 eggs.
Vanilla extract ..... 2 fl. ounces.
Syrup .....1 gallon.

Dissolve in one pint of hot water, thoroughly beat the egg-white; add to the gelatin solution; mix the whole with the syrup and extract; introduce into a fountain with 9 gallons of water; charge as before.

No. 5.

Cox's gelatin ..... 2 boxes.
Whites of 9 eggs.
Vanilla extract ..... 2 or 3 fl. ounces.
Sugar ..... 8 av. pounds.

Prepare like the preceding, adding finally enough water to make 10 gallons, and charge as before.—Manual of Beverages.

The above gallon is 128 ounces.

Conc. Raspberry Jelly.

White sugar ..... 14 pounds.
Glucose ..... 8 pounds.
Gelatin ..... 3½ pounds.
Citric acid ..... ½ ounce.
Water ..... 2 quarts.
Raspberry essence ..... 12 ounces.
Carmine color.

Process.—Soak the gelatin by covering with cold water for two or three hours. Boil the sugar with two-thirds of the glucose and water to the degree of feather, 242 degrees; remove the pan from the fire; stir in the remainder of the glucose with the gelatin and acid; color rather a deep red and add the flavor; let it remain in the pan till the scum forms on top; skim it off and run the mixture twice through a jelly bag; pour it into tins, making a sheet a full inch thick; stand in a cool place till set firm, then cut it up into bars 2¼ inches long and 1⅞ inches wide.

This is the size for ½ pints, other sizes in proportion. The bars are then ready for packing. They may be wrapped in wax paper or rubbed over with pulverized sugar and wrapped in plain paper; then, of course, in showy labels or card boxes.

For Strawberry proceed as above, changing color and essence.

Hop-Ale.

Of the best quality is made direct from hops exactly in the same manner as ordinary bitter ale, with a malt and sugar wort adjusted so that the fermented liquor may not contain more than the non-excisable percentage of proof spirit. Considerable skill is required in making this beer. The quantity of hop used is 1 pound to 12 gallons of boiling water. After standing for three hours in a covered vessel, the infusion is strained through a twill bag, and in it are dissolved 7 pounds of sugar and 1 pound of malt extract, the whole being made up to 12 gallons, with water, and when the temperature reaches 70 degrees F., 1 ounce compressed yeast is added. Ferment eight hours, strain, add 1 ounce of bisulphite of lime solution and a handful of isinglass finings; then rack for three days and bottle. Another formula is:

Demerara sugar ..... 5 pounds.
Saccharin ..... 1½ drams.
Hop-ale essence ..... 1½ ounces.
Ginger-ale essence ..... ½ ounce.
Caramel ..... ½ ounce.
Boiling water ..... 8 gallons.
Brewer's yeast ..... 5 ounces.

Dissolve the caramel and sugar in the water, and when the temperature

is reduced to 70 degrees F., add the yeast and at the end of six hours the essences in which the saccharin has been dissolved.

Hop-Ale Essence.

Tincture of chiretta..... 3 ounces.
Tincture of hops..... 4 ounces.
Essence of pineapple.....½ dram.

From one to two drams of this essence is to be added to each gallon of the brew.

Liquefied Sulphur.

Lime ..... 1 ounce.
Sulphur ..... 2 ounces.
Water ..... 1 quart.

Boil, in an enameled or porcelain lined vessel, for thirty minutes.

The above preparation will make a good selling specialty; is inexpensive and has merit. A few drops of the above in a tumblerful of water produces a sulphur water. One or two ounces make a valuable addition to the bath, where the use of sulphur is indicated.

Polishing Liquid.

(For Polishing Metals.)
Tripoli, in fine powder.... 3 ounces.
Tartaric acid, powder..... 1 dram.
Gasoline .....14 fl. ounces
Oil of mirbane ..... 5 drops.

Sift the powders to remove grit. Mix with the gasoline and oil of mirbane.

Directions.—Shake well and apply with woolen or cotton rag, rub briskly until the dirt is removed, then polish with a dry chamois.

Improved Tea Flavor.

Cassie flowers (not cassia).. 6 ounces.
Orange flowers ..... 2 ounces.

Take the whole flowers, pound them in an iron mortar or grind them to a coarse powder; moisten them with a mixture of
Tincture of cassie..... 2 ounces.
Spirit of Viozone ..... ½ ounce.
Aniline blue, soluble in spirit.10 grains.

The cassie and orange flowers and tincture of cassie may be purchased of Fritzsche Bros., 37 Barclay, New York.

The viozone is a synthetical violet preparation and may be obtained of W. P. Ungerer, 18 Cedar street, New York, or ionone may be used instead of viozone but it is more expensive. Ionone is for sale by Zinkeisen & Co., 52 Dearborn street, Chicago. Spirit of viozone or ionone is made by adding 1 ounce of the respective preparations to 19 ounces of strongest cologne spirits.

Rising Sun Pancake Flour.

Flour ..... 60 pounds.
Buckwheat ..... 60 pounds.
Corn flour ..... 60 pounds.
Cream acid phosphate ..... 7 pounds.
Salt ..... 4 pounds.
Soda bicarb. ..... 3 pounds.
Sugar ..... 5 pounds.

Cheap Baking Powder, Without Alum.

Acid sulphate of potash..... 6 ounces.
Soda bicarb ..... 8 ounces.
Corn starch .....16 ounces.

Mix well.

Emulsion of Cod Liver Oil. Non-Separable.

Cox's, Nelson's or any
good gelatin ..... ½ ounce.
Water, hot ..... 16 ounces.
Acamulsia ..... 9 ounces.
Cod-liver oil ..... 64 ounces.
Oil of wintergreen ..... 2 drachms.
Oil of bitter almonds..... 1 drachm.

Mix with the cod liver oil.

Water ..... 64 ounces.
Hypophosphite of calcium.. 1 ounce.
Hypophosphite of sodium.. 1 ounce.

Chloride of sodium	½ ounce.
Glycerine	16 ounces.
Benzoate soda	1 drachm

Directions.—Let the gelatin soak for half an hour in the 16 ounces of water and dissolve with the aid of heat; strain into and mix with 3 pints of the water; dissolve the salts in one pint of water; mix the 9 ounces of acamulsia with the oil in a dry emulsifier; add the water in which the gelatin is dissolved slowly, turning the emulsifier rapidly for ten minutes. Then add the other pint of water containing the salts, finally adding the glycerine in which the benzoate soda has been dissolved; turn the emulsifier for at least 15 minutes.

A small emulsifying machine to make 3 gallons emulsion may be purchased for twenty-five dollars. This machine has a jacket for hot water, a necessary requisite in cold weather. A useful machine for making, say, one-half gallon of emulsion, may be purchased for about seven dollars. J. H. Day & Co., of Cincinnati, O., make a specialty of pharmaceutical machinery.

The emulsion can be sold at retail for seventy-five cents. It is better for the invalid to take a freshly prepared emulsion than old stock emulsions that may have been on the shelves for years before reaching the consumer. Poisonous ptomaines may be formed in emulsions that are long kept, producing injury instead of benefit to the patient.

Improved Tomato Catsup.

Ripe tomatoes	½ bushel.
Horse radish, grated	2 roots.
Salt	8 ounces.
Black pepper	¼ ounce.
Cayenne	30 grains.
Cloves	60 grains.
Allspice	60 grains.
Marjoram leaves	½ ounce.
Molasses	½ pound.
Vinegar	40 ounces.

Cook the tomatoes in the vinegar till soft; allow to cool, add the other ingredients and pass through a sieve. The thickness of catsup is increased by adding powdered tragacanth (¼ to ½ ounce.)

Laxative Tablets for Colds.

Aloin	2 grains.
Podophyllin	1 grain.
Acetanilid	11 grains.
Soda bicarbonate	6 grains.
Quinine sulphate or cinchonidia sulph	5 grains.

Make into 5-grain tablets. Dose, one to two.

Liquid Beef Peptones With Creasote and Gualacol.

Extract of beef	½ ounce.
Glycerole of pepsin	2 ounces.
Water	4 ounces.
Simple syrup	2 ounces.
Alcohol	2 ounces.
Angelica wine, q. s. to make	32 ounces.
Creosote	16 drops.
Gualacol	6 drops.
Dissolve in alcohol	½ ounce.

Cathartic Cascara Tablets.

Mass licorice	2 ounces.
Water	2½ ounces.
Fl. ext. cascara arom	½ ounce.
Fl. ext. senna	1½ ounces.
Glycerine	¼ ounce.
Senna in fine powder	5 ounces.
Gum acacia powder	½ ounce.
Oil of anise	5 drops.
Oil of fennel	2 drops.
Oil of peppermint	2 drops.

Dissolve the licorice and the acacia in the water by the aid of a water bath.

Add the fluid extracts and glycerine. Drop the oils on the dry senna, mix well and make into a stiff dough by adding the licorice, fluid extracts, etc.

Roll with pressure to the required thickness and cut with a tin cutter (made similar to biscuit cutter) dry by moderate heat.

The tablets should weigh, when dried, 30 grains.

Butter Color.

Annatto	10	ounces.
Caustic potash	1½	ounces.
Borax	1	ounce.
Water	100	ounces.
Tincture of turmeric	20	ounces.

Mix, let stand 48 hours and filter.

Dobells Solution.

Carbolic acid	1½	drachms.
Borax	2	drachms.
Bicarbonate of soda	2	drachms.
Glycerine	2	ounces.
Water sufficient to make	32	ounces.

Lafayette Mixture.

Balsam of copaiba	1	fl. ounce.
Solution of potash	2	fl. drachms.
Sweet spirits of nitre	1	fl. ounce.
Gum acacia mucilage	6	fl. ounces.
Oil of wintergreen	16	drops.

Shake in a bottle the balsam with the potassa and spirit of nitre, then add the other ingredients. Dose—1 tablespoonful 3 times a day after meals.

Balsam of Sulphur.

Sulphur sublimed, light flour	2½	ounces.
Linseed oil, raw	15	ounces.

Boil together in an iron vessel—until uniform regulate the heat carefully so as not to boil over.

Haarlem Oil.

Balsam of sulphur	2	ounces.
Oil of turpentine	2	ounces.
Oil of cade (Juniper tar oil)	4	ounces.

Thielemann's Drops.

Wine of opium	1	fl. ounce.
Tinct. valerian	1½	fl. ounces.
Ether	4	fl. drams.
Oil peppermint	4	fl. drams.
Fl. ext. ipecac	15	minims.
Alcohol	1	fl. dram.

A harmless depilatory, according to Pharm. Centralh., is a mixture of 3 gm. of tincture of iodin, 6 of oil of turpentine, 4 of castor oil, 48 of alcohol and 100 of collodion. The mixture is to be applied daily for 3 or 4 days, after which if the skin or coating which has formed be pulled off the hair will be removed with it.

Boracic Acid and Acetanilid.

Powd. boracic acid	2	ounces.
Powd. acetanilid	2	ounces.

Mix well, useful as a dusting powder.

Talcum Powder.

Powdered talcum	9½	pounds.
Powdered boric acid	½	pound.
Spirit of rose geranium	1	ounce.

Foot Powder.

Powdered talcum	9	pounds.
Powdered boric acid	½	pound.
Powdered acetanilid	½	pound.
Oil of rose geranium turkish	1	ounce.
Alcohol	14	ounces.
Glycerine	1	ounce.

Mix well.

Febromelline.

Fl. ext. senna	2½	pints.
Syrup yerba santa (quinine disguiser)	5	pints.
Fowlers solution	4Z	ounces.

Simple syrup sufficient to make 20 gallons put up in 6 ounce bottles, and before filling put into each bottle 48 grains acetanilid crystals and 48 grains quinidine sulphate.

Syrup Yerba Santa.

Ground yerba santa.....4 pounds.
Ground orange peel.....5 pounds.
Ground coriander seed.....2 ounces.

Alcohol 10 per cent, sufficient to make 5 gallons. Macerate the drugs with 2½ gallons of the menstrum for 8 days, then percolate with the remainder of the 10 per cent alcohol until 5 gallons; in this dissolve 25 pounds of granulated sugar.

Ringworm of the Head.

Salicylic acid.....1 drachm.
Sulphur .....1½ drachms.
White precipitate.....1½ drachms.
Lanoline .....1½ ounces.
Soft soap.....1½ ounces.

Shave off the hair and apply the salve, rub well in for 10 minutes twice a day, the above is excellent for obstinate skin diseases affecting the scalp and beard.

Marrow Pomade.

Beef marrow.....½ pound.
White petrolatum.....¼ pound.
Palm oil.....¼ pound.
Oil of lavender..... 1 drachm.
Vanillin .....¼ drachm.
Musk artificial..... 5 grains.

Itch Ointment (Howe).

Napthol .....1 drachm.
Sulphur .....2 drachms.
Balsam of peru.....1 drachm.
Petrolatum yellow.....1 ounce.

Well rubbed in to the affected parts, preceded by a scrubbing with soap and hot water. After three days' treatment soothing remedies should be applied, returning to the first treatment at the end of the week if itching continues. The clothing should be boiled or baked.

Frost Bite Remedy.

Iodine .....1 drachm.
Sulphuric ether.....1 ounce.
Collodion .....3 ounces.

Dissolve the iodine in the ether, and add to the collodion—shake well. Apply with a small brush to the affected parts.

Frost Bite Emulsion.

Oil of turpentine.....1 ounce.
Yolk of.....1 egg.
Linseed oil, raw.....6 ounces.

Mix and make an emulsion.

Syrup of Sarsaparilla with Iodide of Potash.

Simple syrup.....80 ounces
Alcohol, 188 per cent.....12 ounces.
Water .....20 ounces.
Fl. ext. sarsaparilla..... 2 ounces.
Fl. ext. senna..... 4 ounces.
Fl. ext. stillingia..... 4 ounces.
Iodide of potash, 2 ounces..149 grains.
Burnt sugar coloring..... 2 ounces.
Sarsaparilla flavoring ..... 4 ounces.

Dissolve the iodide of potash in the water, add it to the syrup, mix well, then add the alcohol fluid extracts, flavoring and coloring. This makes a gallon of very superior goods, each drachm contains 1 grain of iodide of potash. The patent and non-secret sarsaparillas contain about one-half grain of iodide of potash to the dose and may be duplicated by the next formula.

Syrup of Sarsaparilla with Iodide of Potash.

Simple syrup.....80 ounces.
Alcohol, 188 per cent.....12 ounces.
Water .....28 ounces.
Fl. Ext. sarsaparilla co..... 2 ounces.
Sarsaparilla flavor..... 4 ounces.
Burnt sugar coloring..... 2 ounces.
Iodide of potash, 1 oz.....74½ grains.

Dissolve the iodide of potash in the water, add it to the syrup, mix well, then add the alcohol, fluid extract, flavoring and coloring.

This formula makes a gallon of alterative medicine containing ½ a grain of iodide of potash, to the drachm, it is quite as good as the patent or non-secret sarsaparillas on the market. Figure the cost and it will be found quite inexpensive. It may be put on the market under a variety of names, such as Spring Blood Cleanser, Regulator, Blood Renovator, etc., etc.

Spring Blood Renovator.

Sulphate magnesia.....16 ounces.
Hyposulphite of soda..... 8 ounces.
Simple syrup.....20 ounces.
Iodine, resublimed.....120 grains.
Alcohol, 188 per cent.....24 ounces.
Tincture capsicum..... 1 drachm.
Oil sassafras.....20 minims.
Oil wintergreen.....10 minims.
Burnt sugar coloring..... 2 ounces.
Liquor potassa.....¼ ounce.
Water .....80 ounces.
Sarsaparilla flavor..... 2 ounces.

Dissolve the iodine and oils in the alcohol, add the tincture of capsicum, dissolve the hyposulphite of soda in 16 ounces of water by the aid of a gentle heat, and add to the iodine solution, to this add the syrup, and flavor, dissolve the sulphate of magnesia in the remainder of the water, add the simple syrup, the liquor potassa and burnt sugar coloring.

This makes an inexpensive good preparation to retail at a moderate price.

Blood Purifying Mixture.

Iodide of potash..... 2 ounces.
Bicarb of potash..... 2½ ounces.
Fowlers solution..... 2 ounces.
Spirits of chloroform.... 4 ounces.
Syrup of sarsaparilla co...32 ounces.
Water .....88 ounces.
Burnt sugar coloring..... 2 ounces.

Dissolve the potashes in the water; add the fowlers solution, the syrup of sarsaparilla co., the spirits of chloroform and burnt sugar coloring.

Dose.—Two teaspoonfuls in half tumbler of water three times daily immediately after eating. The arsenic clears the skin and as a tonic in malarious districts it is often of more service than quinine.

Sarsaparilla Flavor.

Oil of wintergreen
synthetic ..... 4 drachms.
Oil of sassafras..... 3 drachms.
Oil of anise..... 1 drachm.
Alcohol, 188 per cent.....16 ounces.
Warm water..... 4 ounces.

Mix the oils with the alcohol, add the warm water slowly, shake well and let stand for two days before using.

Indian Alterative Medicine.

Ground sarsaparilla.....16 ounces.
Ground prickly ash.....16 ounces.
Ground burdock.....16 ounces.
Ground poke root..... 4 ounces.
Ground stillingia.....16 ounces.
Iodide potash..... 8 ounces.
Sulphate of magnesia.....16 ounces.
Dilute alcohol q. s.

Macerate the drugs with dilute alcohol for seven days, percolate with dilute alcohol until one gallon of extract is obtained, dissolve the iodide of potash and sulphate of magnesia in the extract. This is a powerful alterative medicine, useful to physicians for prescribing in case of severe blood poisoning. It may be sweetened by adding two ounces of saccharine solution.

Saccharin Solution.

Saccharin ..... 1 ounce troy.
Soda bicarbonate.....½ ounce troy.
Alcohol, 188 per cent..... 4 fl. ounces.
Water .....16 fl. ounces.

Rub the saccharin and bicarbonate of soda in a mortar with 10 ounces of the water, filter, add the alcohol to the filtrate and pass enough water through the filter to make 20 ounces. Each fluid drachm contains 3 grains of saccharin.

Golden Eye Salve.

Yellow petrolatum..... 8 ounces.
Hard paraffin, 136 degrees.. 4 ounces.
Oil of sassafras.....¼ ounce.
Yellow oxide of mercury,
fresh .....⅛ ounce.

Mix well and grind into a fine mass free from grit.

Opodeldoc Solid.

Alcohol ..... 3 gallons.
Castile soap (shaved)....10 pounds.
Camphor Gum..... 1½ pounds.
Oil of rosemary..... 3 ounces.
Oil of origanum..... 3 ounces.

Opodeldoc Liquid.

Alcohol ..... 3 gallons.
Castile soap (shaved).... 3 pounds.
Camphor Gum..... 1½ pounds.
Oil of rosemary..... 6 ounces.
Water .....96 ounces.

Mix the alcohol and water and digest soap by means of a water bath until dissolved, then add the camphor and oil and stir until dissolved; the finer the soap is shaved the quicker it will dissolve.

Soluble Oil of Lemon.

Triturate one ounce of oil of lemon in a mortar with two ounces of powdered artificial pumice-stone, and two ounces of powdered sugar until all the oil is absorbed. Then add by degrees eight ounces of alcohol 95 degrees and after all is dissolved, add also by degrees eight ounces of water agitating it briskly all the time, then filter through filtering paper. Return the first runnings or repeat filtration until the essence is perfectly clear which will then be water soluble.

Soluble Oils Absorbent Cotton Method.

One ounce of oil to two ounces absorbent cotton, pour the oil on the cotton a little at a time, and then pick the cotton apart with the fingers so as to evenly distribute the oil. Then pack loosely in a percolator and pass the dilute alcohol through the cotton. The cotton thus used may be dried and can then be employed again.

Acamulsia.

Gum arabic, powdered.....5 ounces.
Gum tragacanth, powdered...5 ounces.
Sugar, powdered.....5 ounces.
Starch, powdered.....5 ounces.
Boric acid, powdered.....1 ounce.

Mix well. This is excellent for rapid emulsifying. I publisned this formula twelve years ago—it has met with general approval. The Canadian Formulary has adopted it. A fresh emulsion is wholesome. Stock emulsions may and frequently have been on the shelves for years before reaching the consumer, are they so wholesome as a freshly prepared article? Are cold storage eggs as appetizing or so wholesome as fresh eggs? Does not poisonous ptomaines form in emulsions that are long kept, producing ill results instead of benefit to the unfortunate invalid?

ACAMULSIA FORMULAS.

Emulsion Cod Liver Oil—A.

50 per cent.

Cod liver oil..... 8 ounces.
Acamulsia .....½ ounce.
Water ..... 8 ounces.
Oil of bitter almonds.....15 minims.
Oil of wintergreen.....15 minims.
Alcohol 188 per cent.....½ ounce.

Directions.—Put the cod liver oil and acamulsia into a quart bottle and shake the mixture for five seconds; then add the eight fluid ounces of water and shake vigorously for two minutes, or until a perfect emulsion is produced. Finally add the oil of wintergreen and almonds previously dissolved in the alcohol. By using moderately warm water the emulsification takes place more quickly than when cold water is employed.

Emulsion of Cod Liver Oil—B.

50 per cent.

Cod liver oil..... 8 ounces.
Acamulsia .....½ ounce.
Water ..... 8 ounces.
Citric acid, powdered.....½ drachm.
Oil of bitter almonds.....20 minims.
Oil of lemon.....40 minims.
Alcohol 188 per cent.....½ ounce.

Mix same as formula A. Dissolve the acid in the water before adding. This is a very pleasant-flavored emulsion.

Emulsion Cod Liver Oil.

40 Per Cent.

Cod liver oil..... 8 fl. ounces.
Cottonseed oil..... 2 fl. ounces.
Acamulsia ..... 5 drachms.
Water .....10 fl. ounces.
Oil of wintergreen.....30 minims.
Alcohol 188 per cent.... 4 fl. drachms.

Directions.—Mix the cod liver oil, cottonseed oil and acamulsia in a quart bottle, then proceed as stated under general directions.

Emulsion Cod Liver Oil.

30 Per Cent.

Cod liver oil..... 6 ounces.
Cottonseed oil..... 4 ounces.
Acamulsia .....¾ ounce.
Water .....10 ounces.
Oil of bitter almonds.....15 minims.
Oil of wintergreen.....15 minims.
Alcohol 188 per cent.....¾ ounce.

Emulsion of Cod Liver Oil with Hypophosphites of Lime and Soda.

50 Per Cent of Oil.

Cod liver oil..... 8 ounces.
Acamulsia .....½ ounce.
Water ..... 8 ounces.
Hypophosphite of soda.....96 grains.
Hypophosphite of lime.....96 grains.
Oil of bitter almonds.....15 minims.
Oil of wintergreen.....15 minims.
Alcohol 188 per cent.....½ ounce.

Directions.—Dissolve the hypophosphites in the water and proceed as directed before.

Emulsion of Cod Liver Oil with Jamaica Rum and Phosphoric Acid.

Cod liver oil.....8 ounces.
Acamulsia ..... ½ ounce.
Water .....6½ ounces.
Dil. phosphoric acid..... ½ ounce.
Jamaica Rum.....1 ounce.

Directions.—Mix the Acamulsia with the cod liver oil, shake well; add the water and shake until emulsified. Then add the diluted phosphoric acid and shake again, then add the jamaica rum.

Emulsion of Creosote.

1 minim of creosote in each fluid drachm.

Creosote ..... 1 drachm.
Oil of sweet almonds..... 4 ounces.
Acamulsia .....¼ ounce.
Water ..... 4 ounces.
Oil of cinnamon.....15 drops.
Oil of bitter almonds.....15 drops.
Alcohol 188 per cent..... 2 drachms.

Directions.—Mix the Creosote with the oil of sweet almonds and proceed as before.

Emulsion of Oil of Turpentine.

6 Per Cent.

Oil of turpentine..... ½ ounce.
Oil of sweet almonds.... 3½ ounces.
Acamulsia ..... ¼ ounce.
Water ..... 4 ounces.
Oil of wintergreen.....30 minims.
Alcohol 188 per cent..... ¼ ounce.

Directions.—Mix the oil of turpentine and oil of sweet almonds and place in a dry 16-ounce bottle, add the acamulsia and shake well; then add the water and shake well for two minutes or more until the oil is emulsified, then add the flavoring dissolved in the alcohol.

General Directions for Emulsions of Volatile Oils and Oleoresins are:

Volatile oil..... ½ ounce.
Oil of sweet almonds.... 3½ ounces.
Acamulsia ..... ¼ ounce.
Water ..... 4 ounces.
Oil of wintergreen.....30 minims.
Alcohol 188 per cent..... ¼ ounce.

Directions.—Mix the volatile oil with the oil of sweet almonds and proceed as directed before. The emulsion will contain about 4 minims of volatile oil in each drachm.

The volatile oils, balsams and oleoresins, which are usually prescribed in doses of from four to ten minims, may be rapidly emulsified in this manner. Such as apiol, balsams, oil of copaiba, oil of cubeb, oleoresins of cubeb and male fern, oil of sandalwood, oil of turpentine, oil of erigeron canadensis, oil of eucalyptus, eucalyptol, terebene gurjun balsam, etc., etc.

Emulsion of Salol.

Five grains of salol in each fluid drachm.

Salol .....320 grains.
Oil of sweet almonds... 4 ounces.
Acamulsia ..... ¼ ounce.
Water ..... 4 ounces.
Oil of wintergreen.... 30 minims.
Alcohol ..... 2 fl. drachms.

Directions.—Dissolve the salol in the oil of almond, with the aid of a gentle heat, then add the acamulsia and proceed as before.

Emulsion Copaiba.

Balsam copaiba..... 1 fl. ounce.
Oil sweet almonds..... 3 fl. ounces.
Acamulsia ..... 2 drachms.
Water ..... 4 fl. ounces.
Oil of wintergreen.....½ fl. drachm.
Alcohol ..... 2 fl. drachm.

Directions.—See general directions.

Compound Emulsion of Copaiba—A.

Balsam copaiba.....1 fl. ounce.
Oil of sandalwood..... ¼ fl. ounce.
Oil of sweet almonds..2¾ fl. ounces.
Acamulsia .....2 drachms.
Water .....4 ounces.
Oil of wintergreen..... ½ drachm.
Alcohol .....2 drachms.

Directions.—Prepare as directed in formula for emulsions of volatile oils.

Compound Emulsion of Copaiba—B.

Balsam copaiba.....1 fl. ounce.
Oleoresin of cubeb.....4 fl. drachms.
Oil of sweet almonds...2½ ounces.
Acamulsia .....2 drachms.
Water .....4 ounces.

Oil of wintergreen..... ½ fl. drachm.
Alcohol .....2 drachms.

Directions.—See general directions for emulsifying volatile oils.

Compound Emulsion of Copaiba—C.

Balsam copaiba.....1 fl. ounce.
Oil turpentine..... ½ ounce.
Oil of sweet almonds...2½ ounces.
Acamulsia .....2 drachms.
Water .....4 ounces.
Oil of wintergreen..... ½ drachm.
Alcohol .....2 drachms.

Directions.—Proceed as directed in previous formulas.

The addition of sweet spirits of nitre, tincture of opium, etc., is frequently made to copaiba mixtures. Deviations from these formula for emulsions of copaiba and combinations of other drugs, must of course be left to the prescriber, the object of presenting here the various formula being principally to show the wide application of acamulsia as the most desirable of all emulsifying agents.

When making emulsions in larger quantities than one-half a gallon, a suitable emulsifying churn should be employed. The longer the mixture is agitated the better the results.

General Directions.

Put the material to be emulsified into a bottle of say twice the size necessary to hold the emulsion, add the acamulsia in the proportion of half a drachm to each ounce of oil and shake well for a few seconds. Then add all at once the same quantity of water as of oil and shake vigorously for two minutes, or until a perfect emulsion is formed; then add the flavor. When preparing emulsions of creosote, oil of turpentine, terebene, etc., you should dilute the medicament with cottonseed oil, peanut oil or almond oil, using enough of the diluent to make the finished preparation contain fifty per cent of the combined oils and fifty per cent of water. Always mix the acamulsia first with the oil before adding the water. Do not add the flavoring oils dissolved in spirit until a perfect emulsion has been made, as alcohol slightly interferes with emulsification. The flavoring oils may be added to the fixed oils if alcohol is objected to. The only reason for adding the alcohol is its usefulness as a preservative; it may be dispensed with, however, as emulsions made with acamulsia will not sour.

Salad Dressing.

Salt .....1½ ounces.
Sugar .....1 ounce.
Salad oil .....2 ounces.
Eggs 1

Emulsify by beating up the egg with the salad oil and sugar, add the salt and

Tincture capsicum.....20 drops.
Mustard ..... 1½ ounces.
Malt vinegar..... 6 ounces.

Vanillin Powder for Flavoring.

Vanillin ..... 1 ounce.
Sugar, powdered..... 5 pounds.
Brown coloring.....½ ounce.

Mix.

Lemon Powder for Flavoring.

Oil of lemon..... 4 ounces.
Magnesia carbonate..... 4 ounces.
Sugar, powdered..... 4 pounds.
Dextrine yellow..... 1 pound.

Mix.

"Devitt's Sarsaparilla Cordial."

Strong ess. sarsaparilla..... ½ pint.
Fructiphos .....1½ pints.

Aqua .....6½ pints.
Col. caramel.....2 ounces.
Filter.—Use 2 teaspoonfuls to 1 glass of ice water. A hummer for summer.

Devitt's Concentrated Grape Juices.

Strong ess. grape.....4 ounces.
Fructiphos .....1½ pints.
Good grape jelly.....1 pound.
Aqua .....6½ pints.
Red coloring.....1 dram.
Soluble blue aniline.....gtt x v.
Mix.
Used same as sarsaparilla cordial.
Fructiphos is made by the Provident Chem. Wks., St. Louis, Mo.

Birch Beer Flavor for Soda Water.

Oil of wintergreen synthetic. 5 ounces.
Oil of lemon.....¼ ounce.
Oil of cloves.....30 drops
Extract of vanilla..... 4 ounces.
Alcohol .....12 ounces.
Mix. Add one to two ounces of the above to each gallon of syrup. Use one ounce of the syrup to one glass of carbonated water.

Oil of Vanillin (So-Called).

Vanillin .....7½ drachms.
Coumarin ..... ½ drachm.
Alcohol .....6 ounces.
Water .....2 ounces.
Glycerine, hot.....8 ounces.
Mix.

Shampoo Powder.

Soda bicarbonate..... 8 ounces.
Castile soap, powdered.....16 ounces.
Borax, powdered..... 6 ounces.
Oil of lemongrass..... 1 drachm.

Cement.

Gelatine .....3 ounces.
Acetic acid.....2 ounces.
Carbolic acid.....5 grains.
Oil of cloves.....5 minims.
Water enough to make.....1 pint.
Soak the gelatine in half a pint of water for 4 hours, then heat by water bath in glass or porcelain dish, add the acids, dissolve, add the oil of cloves and sufficient hot water to make a pint, strain.

Cements.

Cement-Gelatine .....1 ounce.
Water .....5 ounces.
Gum mastic.....1½ drachms.
Gum ammoniac ..... ½ drachm.
Alcohol .....2½ ounces.
Dissolve the gelatine in the water and continue the heat till the solution has evaporated to about 3 fluid ounces; have the gums previously dissolved in the alcohol, and to this solution heated nearly to boiling, add the hot solution of gelatine and mix them thoroughly. Put up in small bottles tightly stopped.
This cement may be used for china or glassware, and for attaching wood, ivory, jewels, metallic substances, etc.

Dough to Cleanse Paper.

Take five pounds of wheat flour, place in vessel, add cold water, stir or beat to a thick paste as dough for bread, add one ounce of powdered alum, then insert steam pipe and inject steam until thoroughly boiled, stirring continually while boiling to break the lumps, when suitable consistence is obtained—then take out whilst warm and add all the dry flour it will absorb working or kneading by hand as dough for bread. When ready to use add dry corn meal, work up same as before until it does not stick to the hands, it is now ready for use. Do not brush or wipe off paper, leave on all the dust as the dough cleanses better. Make

balls of a convenient size. If steam pipe arrangement is not convenient use a water bath boiler.

The above will clean three or four moderate sized rooms, paper or water color or fresco in water colors.

There is no rule for rubbing, either up and down in straight strokes or in circles, anyway to suit the fancy.

Nail Varnish.

Hard paraffin ..... 1 ounce.
Oil citronella .....10 drops.
Oil lavender..... 1 drachm.
Acetone .....16 ounces.

Shave the paraffin and dissolve in the acetone.

Foot Powder.

Talcum powder.....16 ounces.
Salicylic acid.....½ ounce.
Powdered acetanilid.....½ ounce.

Petrolatum Camphor Ice.

White petrolatum.....8 ounces.
Hard paraffin.....5 ounces.
Gum camphor.....1 ounce.

Nail Polish.

Oleate of tin, powdered..... 4 ounces.
Finely powdered pumice stone ..... 3 ounces.
Oil of cinnamon..... 5 drops.
Oil of bergamot.....10 drops.

Mix thoroughly and sift through a fine sieve.

Nail Polish Colored.

Putty, powder..... 4 ounces.
Powdered carmine.....10 grains.
Otto of rose..... 5 drops.

Mix thoroughly and sift well.

Perfumes for Disguising Leatherette Odors.

No. 1.

Oil of birch tar..... 1 ounce.
White vaseline oil..... 3 ounces.

No. 2.

Oil of myrrbane..... 1 ounce.
White vaseline oil..... 3 ounces.

No. 3.

Sandalwood oil.....½ ounce.
Pat chouli oil.....½ ounce.
White vaseline oil..... 3 ounces.

After applying to the leatherette wash off with a mixture of caustic soda, dissolved in alcohol 1 pint and 25 pints of water.

The first imparts a smell of russian leather, the second an almond odor, and the third is an East Indian favorite.

Laxative Lithia Salts.

Sodium sulphate anhydrous..16 ounces.
Sodium citrate.....32 ounces.
Sodium chloride..... 1 ounce.
Lithium citrate..... 1 ounce.

Mix and put into well stoppered bottles.

Dose.—1 teaspoonful.

Said to be valuable in preventing the formation of gall stones.

Liquid Splint Formula.

Powdered starch..... 1 ounce.
Gelatin sheet ..... 1 ounce.
Silicate of potash solution..32 ounces.
Boric acid, powdered.....½ ounce.

Mix the starch with the solution of silicate of potash by shaking from a pepper box and stirring constantly; soften the gelatin by letting it stand for 24 hours in cold water sufficient to cover it, then reduce with boiling water to the consistency of mucilage, and mix with the starch and silicate

of soda. Then put into a jug of double the capacity and ferment at temperature of 80 to 90 F., for three or four days; then add the boric acid. Mix well and it is ready for use. If too thick after standing, thin it with boiling water; keep corked. Apply a silk stocking or a roller bandage and then apply a coat of this preparation with a brush and repeat until three or four layers have been applied or until the splint is thick enough. It may be cut after hardening and eyelets or laces put in.

Published by Dr. Charles H. Gallagher, Slatersville Springs, N. Y.

Antiseptic Powder.

Zinc sulphate anhydrous...	10 ounces.
Boric acid	60 ounces.
Menthol	2 ounces.
Eucalyptol	2 ounces.
Oil of wintergreen synthetic	2 ounces.
Carbolic acid	2 ounces.
Glycerine	2 ounces.

Mix the powders, then mix the carbolic acid with the glycerine, add the wintergreen and eucalyptol, and sift.

Digestive Powder.

Golden Seal.....	1 ounce.
Rhubarb	5 ounces.
Willow charcoal	5 ounces.
Precipitated chalk	5 ounces.
Cayenne pepper	½ ounce.

Mix well. May be given in capsules of 5 grains or made into tablets. An excellent cheap digestive.

Perspiration Powders.

Talcum powder.....	5 ounces.
Alum powder	5 ounces.
Salicylic acid	1½ ounces.
Boric acid 10	ounces.

Put up with the powder 1 grain tablets of permanganate of potash tablets. With instructions to bathe the feet each night in hot water in which is dissolved one of the permanganate tablets; then dust on the powder.

Foot Powder.

Talcum powder, perfumed..	80 ounces.
Acetanilid, powdered.....	5 ounces.
Boric acid, powdered.....	15 ounces.

Mix well.

Camphorated Phenol, No. 1.

Carbolic acid crystals.....	20 ounces.
Gum camphor	40 ounces.
Eucalyptol	40 ounces.

This makes an excellent preparation —a much better one than the formula calling for white mineral oil to replace the eucalyptol.

Camphorated Phenol, No. 2.

Carbolic acid crystals.....	20 ounces.
Gum camphor	40 ounces.
White mineral oil, inodorous	40 ounces.

Camphorated Phenol, No. 3.

Carbolic acid crystals.....	16 ounces.
Gum camphor	22 ounces.
Eucalyptol	16 ounces.
White mineral oil, inodorous	32 ounces.

Dissolve the camphor and acid in the eucalyptol and add the oil.

This is a good article and at moderate cost.

Syrup of Sunflower Seeds.

Sunflower seeds, bruised..	4½ ounces.
Sugar, granulated 12	ounces.
Holland gin 32	ounces.
Water .....sufficient.	

Pour 32 ounces of water on the seed, boil and strain; evaporate down to 12 ounces. Dissolve the sugar in this and add the gin.

Elixir Vita Valorous.

Calcium hypophosphite..	16 grains.
Sodium hypophosphite...	10¾ grains.
Potassium hypophosphites	10¾ grains.
Manganese hypophosphite	1 grain.
Iron hypophosphite.....	1 grain.
Quinine hypophosphite...	½ grain.
Strychnine hypophosphites	8-128 grain.
Coca leaves	40 grains.
Simple elixir	16 ounces.

Kastagon Liniment.

White mineral oil, inodorous	128 ounces
Oil of wintergreen synthetic	16 ounces.
Oil of cajeput.....	16 ounces.
Oil of peppermint.....	2 ounces.

Color red by steeping some alkanet root tied in a rag in the mineral oil. Let macerate, using a gentle heat, until a suitable color is obtained. The above is a good, cheap liniment for external and internal use.

Carpet Cleanser.

Shave up one five-cent bar of Ivory soap and dissolve in one gallon of hot water. Add four ounces of sal. soda and four ounces of borax. When the above is all dissolved, add four gallons of water. Apply with a brush, rinse with clear water, using a flannel cloth.

Cleaner for Upholstery, Colored Rugs, Etc.

Gasoline	1 pint.
Chloroform	1 ounce.

Apply with a sponge or woolen cloth, first cleansing the article with castile soap and tepid water to remove or dampen foreign matter. Absorb the moisture with a towel or soft cloth, then apply the preparation.

Electric Liniment.

Petroleum oil	3 quarts.
Spirits turpentine	1 quart.
Oil of origanum.....	½ pint.
Oil of tar	½ pint.
Oil of Black pepper.....	1 ounce.

Glycerole of Pepsin and Rhubarb.

Pepsin 640	grains.
Hydrochloric acid.....	1½ drachms.
Glycerine	9 ounces.

Distilled water, a sufficient quantity.

Tincture rhubarb	1 ounce.

Mix the hydrochloric acid, glycerine and six fluid ounces of the water; add the rhubarb. Then add the pepsin. After one week pour off the clear liquid. Add sufficient water to make 16 ounces.

Each drachm contains 5 grains.

Liquid Digitalin Compound.

Tincture of digitalis.....	16 ounces.
Strychnine sulphate	10 grains.
Spirit of nitroglycerine....	2 ounces.
Fl. ext. Cactus grandiflora..	2 ounces.
Simple elixir	80 ounces.
Water	28 ounces.

To Make Tincture Digitalis.

Fluid extract digitalis.....	2½ ounces.
Alcohol	6¾ ounces.
Water	6¾ ounces.

Fruit Nectar.

Pineapple juice	16 ounces.
Extract vanilla	2 ounces.
Strawberry juice	12 ounces.
Extract lemon	4 ounces.
Citric acid	¼ ounce.

Universal Bitters.

Orange peel ..... 2 pounds.
Ginger jam, ground..... ¼ pound.
Oil orange ..... ½ ounce.
Oil coriander ..... ½ ounce.
Oil lemon ..... ½ ounce.
Cologne spirits ..... 6 gallons.
Water ..... 12 gallons.
Saccharine ..... 30 grains.
Syrup ..... ¾ gallons.
Sugar coloring ..... 2 ounces.

Macerate 1 week with 2 gallons spirits and 2 gallons water.

Mix spirits and water before macerating or percolating.

Teething Powders.

Calomel ..... 1 ounce.
Sugar milk, powdered..... 2½ ounces.
Carmine ..... 2 grains.

Weigh into 3-grain powders and direct that for a child of 1 to 3 months, a 1-3 of a powder be taken; from 3 to 6 months, ½ powder; from 6 months upwards, 1 powder, and no more.

Liquid Iodine.

Iodine resublimed..... 1 ounce.
Oleic acid ..... 4 ounces.
Liquid petrolatum oil..... 3 ounces.
Aqua ammonia, strong..... 2 grains.

Dissolve the iodine in oleic acid and add the others.

Hair Curling Fluid.

Borax ..... 3 ounces.
Gum arabic ..... 1 drachm.
Hot water ..... 2 drachms.
Spirits of camphor..... 2½ ounces.

Dissolve borax and gum in hot water and when nearly cool add the spirits of camphor.

Wet the hair with above liquid upon retiring.

Decolorized Tincture of Iodine.

Iodine ..... 10 scruples.
Hyposulphite of soda..... 10 scruples.
Distilled water ..... 10 scruples.
Water of ammonia ..... 16 scruples.
Alcohol ..... 25 drachms.

Place the iodine, hyposulphite and water in a glass flask and digest at a gentle heat until solution is effected. Then add the ammonia, shake for a few minutes and add the alcohol. Let the mixture stand for 3 days and filter.

Bronzing Liquid.

Bronze powder ..... 2 ounces.
Boiled linseed oil..... 2 drachms.
Coach varnish ..... 4 drachms.
Turpentine ..... 4 drachms.

Mix.

Spirits Thymol Compound (English).

Benzoic acid..... 1 ounce.
Borax ..... 1 ounce.
Boric acid ..... 2 ounces.
Distilled water .....48 ounces.

Dissolve with the aid of heat, then add:

Alcohol ..... 24 ounces.
Oil wild thyme..... 5 minims.
Oil peppermint ..... 15 minims.
Oil wintergreen ..... ½ ounce.
Eucalyptol ..... ½ ounce.
Thymol .....160 grains.

Mix and add to the above
Distilled water to make...160 ounces.

Color with 10 drops of caramel. Let stand 24 hours and filter with Fuller's earth and wetted double filter.

Harmless Headache Remedy.

Caffeine alkaloid ..... 8 grains.
Acet. acetyl salicylate..... 40 grains.
Mucilage acacia ..... 1 drachm.
Simple elixir, red, to make 1 ounce.

Dose, 1 teaspoonful. This is a very efficient, useful preparation for headaches, rheumatism, etc., etc.

Chill Breaker (Dr. Earley).

Quinine sulphate ..... 1 drachm.
Tincture iodine comp..... 1 drachm.

Mix and make into 20 capsules or pills.

Dose, 1 capsule or pill every 3 hours.

Compound Tincture Iodine.

Iodine resublimed .....½ Troy ounce.
Iodide potash ..... 1 Troy ounce.
Alcohol .....16 fl. ounces.

Phosphate of Soda Solution.

Phosphate of soda granular ..... 6 pounds.
Citric acid ..... 1½ pounds.
Nitrate of soda..... ½ pound.
Water ..... 3 pints.

Dissolve and add water to make 126 ounces. Flavor with soluble essence of lemon, 2 ounces. May be sweetened with solution of saccharine.

Birch Beer Essence.

Oil of wintergreen synthetic 6 ounces.
Oil of sassafras..... 1 ounce.
Oil of lemon..... 1 ounce.
Oil of cassia..... 20 drops.
Gum catechu..... ¼ ounce.
Carbonate of magnesia..... 6 ounces.
Alcohol .....144 ounces.
Water .....128 ounces.
Burnt sugar coloring..... 4 ounces.

Add the oils to the alcohol and the carbonate of magnesia, then the water; dissolve the catechu in a portion of the water by heat. When cool add together and filter.

Baking Powder.

No. 1.

Pure grape cream of tartar.3 pounds.
Soda bicarb. (baking soda).1½ pounds.
Corn starch .....1½ pounds.
Tartaric acid .....1 ounce.
Powd. carbonate ammonia..2 drams.

Use two teaspoonfuls to one quart of flour.

Mix well.

No. 2.

Pure grape cream of tartar.1¾ pounds.
Soda bicarbonate .....1 pound.
Corn starch .....2 pounds.
Tartaric acid .....3 ounces.
Powd. carbonate ammonia..1 dram.

Use two teaspoonfuls to one quart of flour.

Mix well.

No. 3.

This is the finest cheap baking powder that can be made. Costs about 7 cents a pound.

Pure grape cream of tartar. ½ pound.
Burnt alum .....1 pound.
Soda bicarbonate .....1½ pounds.
Acid phosphate of lime....1 pound.
Corn starch .....2½ pounds.

Use two teaspoonfuls to one quart of flour.

Mix well.

No. 4.

A satisfactory baking powder to many when price is an object. Costs about 3 cents a pound.

Burnt alum ..... 1½ pounds.
Soda bicarbonate..... 1½ pounds.
Acid phosphate of lime... 1½ pounds.
Corn starch ..... 3 pounds.

Use two teaspoonfuls to one quart of flour.

Mix well.

Morning Pancake Flour (self rising).

Flour ..... 60 pounds.
Buckwheat ..... 60 pounds.
Corn flour ..... 60 pounds.
C. A. P..... 7 pounds.
Salt ..... 4 pounds.
Soda ..... 3 pounds.
Sugar ..... 5 pounds.

Bluff City Bottling Co.'s Apple Cider.

Acidum tartaricum	1 ounce.
Ess. Apple	½ dram.
Color caramel	½ dram.
Saccharum brown	1 pound.
Cider compound, apple	½ pound.

Mix.

Cork tight, with vent hole and let stand 1 month.

Cheap Stick Blue.

Soluble blue	4 pounds.
Common salt	4 pounds.
Yellow dextrine	4 pounds.
Borax	4 pounds.
Gum senegal	2 pounds.
Acid oxalic	1½ pounds.
Aqua	q. s.

Mix same as best blue.

Roach Powder.

Amorphous phosphorous	¾ ounce.
Powd. green wormwood	16 ounces.
Powd. capsicum	¼ ounce.

Rheumatism Remedy.

Iodide potash	1½ ounces.
Salicylate soda	2 ounces.
Acetate potassium	2 ounces.
Glycerine	2 ounces.
Wine of colchium	½ ounce.
Water q. s. to make	1 pint.

Dissolve the salts in ½ pint of water, add the glycerine and wine of colchicum and then water to make a pint.

"Ko-Ko Toilet Cream."

Alcohol	2 pints.
Cast. oil	2 pints.
Co-Coa nut oil	4 ounces.
Oil lavender	1 dram.
Oil bergamot	1 dram.
Oil white thyme	¼ dram.

Mix.

Magic Eye Salve.

Albolene	6 lbs. and 4 ozs.
Paraffine	1 lb. and 14 ozs.
Oxide zinc	1 lb. and 14 ozs.
Benzoic acid	5 drams.
Morphine	2 drams.
Oil rose	1 dram.
Alcohol	8 ounces.

Mix and grind through mill.

Depilatory.

Barium sulphide	½ ounce.
Zinc oxide	¼ ounce.
Starch	¼ ounce.

Make into thin paste with water. Apply to the objectionable hair and leave on until a slight warmth is felt. Wash off and apply a little cream.

Southern Chill Cure (Tasteless).

Simple syrup	4 gallons.
Quinidia alkaloid	9 ounces.
Iron by hydrogen	12 ounces.
Oil peppermint	1 drachm.
Caramel	4 ounces.

Mix.

Centigrade to Fahrenheit.

From Centigrade to Fahrenheit
'Tis easy to divine
You first must use arithmetic,
And multiply by nine;
The answer now divide by five,
And then you have in view
The very number that you seek.
By adding thirty-two.

Fahrenheit to Centigrade.

From Fahrenheit to Centigrade,
However, it is plain—
You first must take the thirty-two
And multiply again;
But this time only by the five,
And then you draw a line
Straight up and down in order that
You may divide by nine.
—The Dietetic and Hygienic Gazette.

POWDERED
Flavoring Extracts.

Oil of lemon ..... 15 ounces.
Citral ..... 1 ounce.

Spray as much as required on carbonate of magnesia, then incorporate the carbonate of magnesia with powdered corn starch or sugar of milk, or the oil may be sprayed on the sugar of milk direct. Be careful to dry at a low temperature.

Almond.—Use oil of bitter almond free from prussic acid; spray same as above.

Raspberry and Strawberry.—Use the pure fruit juice concentrated; spray on powdered sugar.

Cream for Chapped Hands.

Gum tragacanth ..... 3 ounces.
Boiling water ..... 4 pints.

Rub smooth and let stand till cold.

Glycerine ..... 4 pints.
Chlorate potash, powdered... 8 ounces.
Oil rosemary ..... 5 drops.
Oil cassie ..... 5 drops.
Oenanthic ether ..... 5 drops.

Drop the oils into the glycerine and rub smoothly.

If found too thick, dilute with distilled water; strain through cheese cloth without pressing.

Marmalade.

From Skuse's Art of Confectionery.

Have every ingredient of prime quality and utensils scrupulously clean. Use sound heavy Seville or Malaga oranges.

Within the last few years the rind only of the orange is used by some firms for making essential oils. The pulpy portion is sold at a low price to marmalade makers.

TO PREPARE THE CHIPS AND PULP.

Put any quantity of oranges into a tub, cover them with boiling water, and let them soak for a few minutes, then pick them up, one at a time, and mark the rind with a sharp knife into four quarters; now separate the pulp from the rind; pack the rind, cup shape, into the boxes of the machine, and cut them into slices.

When cold, sort them over; take out those imperfectly cut and put them through the machine again; if well packed in the machine box in the first instance, there will be few that require recutting. Now take the slices, fill the steam tub, turn on the steam and let them cook until tender; try them between the finger and thumb; when you can nip them off short, they are done, or they may be boiled in a steam pan by covering them with water, the steam turned on, and allow to cook for nearly two and a half hours; when ready, take them out and strain through a wicker sieve.

To prepare the pulps, put any quantity into a steam pan, cover them with water, turn on the steam, and stir with a long flat stick until reduced to a mass of pulp; now take them out and rub them through a cane sieve, just large enough to keep back the pips, or put them through a pulping machine with copper sieve, eight holes to the inch. Dummies are treated, of course, same as pulp.

Orange Marmalade.

Orange pulp ..... 40 pounds.
Orange chips ..... 20 pounds.
Best white sugar ..... 60 pounds.

Process.—Put the ingredients in a pan; stir till the sugar is dissolved, then occasionally till ready; try the same as jam; when it falls off the stick in flakes, it is ready; turn it into a cooler, from which fill the packages.

Home-made Marmalade.

Orange pulp, strained..... 40 pounds.
Orange chips ..... 10 pounds.
Dutch crushed sugar.....
Best apple juice ..... 1 gallon.

Process.—Pass half the pulp while

hot through a coarse hair sieve; mix all the ingredients together in a pan and boil off in the ordinary way. The oranges for the home-made article should be specially heavy, with a thinnish skin. N. B.—When tnere is a superabundance of chips and no dummies to be had, work up the surplus chips in cheaper qualities, using apple juice and glucose. When preserving orange pulp for future use, mix the pulp and chips together in the proportion for boiling.

Sweet Cider.

Evaporated cider ..... 1 gallon.
Soft water ..... 6 gallons.

Evaporated Cider is apple juice that four-fifths of the water has been driven off by evaporation and is sold at about 50 cents per gallon. It makes a pure article of sweet cider at a very little cost.

ORANGE CIDER.

Take juice and grated rinds of 12 oranges to 4 gallons of sweet cider made as above. Use benzoate of soda preservative.

Lily, Concentrated.

Lily, concentrated ..... 1 ounce.
Cologne spirits ..... 15 ounces.

CONCENTRATES.

Concentrates are useful for making toilet waters. The process is: Take ½ ounce of concentrates, rub up with a little magnesia or place on absorbent cotton, run 1 gallon of water through. Chlorate of potash, 1 ounce, will be a very useful adjunct.,

Heliotrope, Concentrated.

Heliotropol ..... 1 ounce.
Coumarin ..... 2 drachms.
Bergamot ..... 1 drachm.
Oil santal..... 1 drachm.
Oil hyacinth geraniol..... 2 ounces.
Oil bitter almonds..... 5 drops.
Oil cloves .....10 drops.
Spirits to make.....16 ounces.

Arcadian Pink, Concentrated.

Oil terpineol ..... 2 ounces.
Oil cloves..... ½ ounce.
Oil muguet ..... ½ ounce.
Oil rosewood ..... ½ ounce.
Tinct. musk ..... 2 ounces.
Tincture rose ..... 4 ounces.
Oeillet ..... ½ ounce.
Vanillin ..... 2 drachms.
Spirits ..... 6 ounces.
Color reddish.

Rose Geranium, Concentrated.

Oil rose geranium.....1½ ounces.
Sandal ..... ¼ ounce.
Tincture rose washings to make ..... 1 pint.

Violet, Concentrated, No. 1.

Ionone ..... 1 ounce.
Cassie washing ..... 8 ounces.
Rose washing ..... 5 ounces.
Oil santal..... 10 drops.
Tincture civette ..... 2 ounces.
Vanillin ..... ½ drachm.
Coumarin ..... ½ drachm.

White Rose, Concentrated, No. 1.

Oil rose, concentrated.... ½ ounce.
Jasmin, concentrated..... ¼ ounce.
Tincture Cassie washings. 8 ounces.
Oil patchouli ..... 5 drops.
Oil Santal ..... 2 drachms.

Crab Apple, No. 1.

Tuberose ..... 64 ounces.
No. 1 violet ..... 32 ounces.
Oil muguet..... 1 dram.
Hyacinth geraniol ..... ½ ounce.
Tinct. musk ..... 8 ounces.
Color, red and green to make pale olive.

Lilac, Concentrated.

Tinct. jasmine	8 ounces.
Tinct. orange	1 ounce.
Tinct. vanilla	4 ounces.
Oil geranium rose	½ dram.
Oil muguet	2 ounces.
Tincture civette	1 ounce.
Oil terpineol	1 ounce.

Heliotrope, Concentrated.

Heliotropol	1 ounce.
Coumarin	2 drachms.
Oil bergamot	1 drachm.
Oil santal	1 drachm.
Oil hyacinth geraniol	2 drachms.
Oil bitter almonds	5 drops.
Oil cloves	10 drops.
Spirits to make	16 ounces.

Jockey Club, Extra.

Tincture Jasmin	15 ounces.
Tinct. orange flowers	12 ounces.
Tincture rose	12 ounces.
Tincture cassie	6 ounces.
Coumarin	10 grains.
Tincture musk	4 ounces.
Tincture civette	2 ounces.
Tincture vanilla	1 ounce.
Oil rose	1 drachm
Spirits	8 ounces.
Water	4 ounces.

Lilac, Concentrated.

Tincture jasmin	8 ounces.
Tincture orange	1 ounce.
Tinct. vanillin, 4 to gal.	4 ounces.
Tincture civette	1 ounce.
Oil rose geranium	1 drachm.
Oil muguet	2 ounces.

Crab Apple, Concentrated.

Tuberose washings	8 ounces.
Concentrated violet	1 ounce.
Oil terpineol	1 ounce.
Hyacinth geraniol	½ ounce.
Tinct. musk	4 ounces.
Oil rosewood	½ ounce.

Jockey Club Concrete.

Oil of bergamot	2 ounces.
Oil of lavender	½ ounce.
Oil of rose geranium	1 ounce.
Oil of carraway	1 drachm.

Proceed as above. By adding fifteen grains of bichloride of mercury to each gallon and suitable coloring matter. Very good antiseptic toilet waters may be produced at little cost.

Dandruff Cream.

Petrolatum, yellow	8 pounds.
Salol	1 pound.
Oil of bergamot	1 ounce.
Oil of citronelle	1 drachm.
Oil of carraway	1 drachm.

Dissolve the salol in the petrolatum by the aid of a gentle heat. When cool, add the oils.

White Rose Extract, Extra.

Violet tincture	24 ounces.
Jasmin tincture	24 ounces.
Cassie tincture	12 ounces.
Rose tincture	48 ounces.
Ionone	¼ ounce.
Oil of patchouli	10 drops.
Oil of rose	3 drachms.
Oil of sandalwood	2 drachms.
Tincture musk, artificial	8 ounces.
Cologne spirits to make	128 ounces.

SECOND QUALITY EXTRACTS.

Ylang Ylang Extract.

Tincture of cassie	2 pints.
Tincture of jasmine	2 pints.
Oil of rose	1 dram.
Oil of orange, sweet	1 dram.
Oil of bergamot	2 drams.
Oil of hyacinth with jonquil	1 dram.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Lily of the Valley.

Concrete lily of the valley	¾ ounce.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Stuart Bouquet.

Otto rose	¼ ounce.
Oil of sandalwood	½ dram.
Oil of bergamot	½ ounce.
Tincture of cassie	8 ounces.
Vanillin	1 dram.
Tincture of musk	1 ounce.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Frangipanni.

Otto rose	¼ ounce.
Oil of sandalwood	½ ounce.
Oil of bergamot	½ ounce.
Oil of orange, sweet	¼ ounce.
Vanillin	1 dram.
Coumarin	1 dram.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Color, golden yellow.

Carnation Pink.

Cologne spirits	4 pints.
Oil of terpineol	3 ounces.
Vanillin	2 drams.
Oil of cloves	1 dram.
Oeillet	1 ounce.
Glycerine	8 ounces.
Spirits to make	1 gallon.

Color, golden.

Oriental Bouquet.

Tuberose	2 pints.
Oil of rose geranium	3 drams.
Oil of sandalwood	3 drams.
Oil of bergamot	2 drams.
Oil of cassia	2 drams.
Coumarin	1 dram.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Color, olive.

White Lilac.

Oil of terpineol	3 ounces.
Hyacinth, geraniol	1 dram.
Tincture of jasmine	8 ounces.
Tincture of orange flowers	8 ounces.
Vanillin	1 dram.
Coumarin	1 dram.
Tincture musk	8 ounces.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Color, heliotrope.

Heliotrope.

Heliotropin	1 ounce.
Coumarin	2 drams.
Vanillin	1 dram.
Bergamot	1 dram.
Oil of sandal	1 dram.
Hyacinth, geraniol	4 drams.
Oil of bitter almonds	5 drops.
Oil of cloves	10 drops.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Color, heliotrope.

White Rose.

Oil of rose	¼ ounce.
Oil of rose geranium	¼ ounce.
Oil of bergamot	⅛ ounce.
Oil of patchouli	20 drops.
Vanillin	⅛ ounce.
Coumarin	⅛ ounce.
Glycerine	6 ounces.
Cologne spirits, to make	1 gallon.

Color, light green.

Crabapple.

Oil of terpineol	1 ounce.
Oil of bois de rose	1 ounce.
Hyacinth with jonquil	⅛ ounce.
Vanillin	⅛ ounce.
Coumarin	⅛ ounce.
Glycerine	6 ounces.
Spirits, to make	1 gallon.

Color, olive.

Jockey Club.

Tincture of jasmine	16	ounces.
Tincture of orange	12	ounces.
Tincture of rose	12	ounces.
Tincture of cassie	6	ounces.
Coumarin	½	dram.
Tincture of civette	4	ounces.
Tincture of vanillin	1	dram.
Otto rose	1	dram.
Glycerine	6	ounces.
Cologne spirits	64	ounces.

Color, light brown.

Hyacinth.

Terpineol	1	ounce.
Hyacinth with jonquil	1	ounce.
Glycerine	8	ounces.
Spirits, to make	1	gallon.

Color, light straw.

Rose Geranium.

Oil of rose geranium	1½	ounces.
Oil of sandalwood	¼	ounce.
Oil of bergamot	¼	ounce.
Coumarin	2	drams.
Glycerine	6	ounces.
Cologne spirits, to make	1	gallon.

Color, pale green.

Violet.

Tincture of cassie	32	ounces.
Ionone	1	ounce.
Glycerine	6	ounces.
Vanillin	1	dram.
Coumarin	1½	drams.
Tincture of civette	4	ounces.
Oil of muguet	½	dram.
Oil of sandalwood	½	dram.
Glycerine	6	ounces.
Cologne spirits, to make	1	gallon.

Color, olive.

Jasmine Extract.

Tincture of jasmine	4	pints.
Tincture of orange	12	ounces.
Tincture of cassie	4	ounces.
Vanillin	1	dram.
Glycerine	8	ounces.
Coumarin	1	dram.
Spirits, to make	1	gallon.

Orange Blossom.

Tincture of orange	4	pints.
Oil of sweet orange	1	dram.
Oil of neroli	2	drams.
Coumarin	2	drams.
Glycerine	6	ounces.
Spirits, to make	1	gallon.

Color, pale yellow.

New-Mown Hay.

Tincture of cassie	1	pint.
Tincture of orris	1	pint.
Spirits	4	pints.
Oil of sandalwood	30	drops.
Oil of cloves	15	drops.
Oil of neroli	30	drops.
Oil of rose geranium	60	drops.
Coumarin	½	ounce.
Glycerine	8	ounces.
Cologne spirits, to make	1	gallon.

Color, reddish brown.

Syntols or Concentrated Perfumes.

Use 1 pint of syntol to 7 pints of cologne spirits.

Syntol White Rose.

Oil of rose	½	ounce.
Conct. rose	½	ounce.
Conct. jasmine	¼	ounce.
Tincture of cassie	7	ounces.
Oil of sandal	2	drams.
Oil of patchouli	15	drops.
Cologne spirits, to make	16	ounces.

Syntol Arcadian Pink.

Oil of terpineol	2	ounces.
Oil of cloves	½	ounce.
Oil of muguet	½	ounce.

Oil of bois de rose	½	ounce.
Tincture of musk	2	ounces.
Tincture of rose	4	ounces.
Oeillet	½	ounce.
Vanillin	2	drams.
Cologne spirits, to make	16	ounces.

Syntol Persian Pink.

Oil of bergamot	3	drams.
Oil of lemon	4	drams.
Oil of lavender	1½	drams.
Oil of rose geranium	1	dram.
Oil of cloves	45	drops.
Oil of cinnamon	1½	drams.
Tincture of musk	2	ounces.
Spirits, to make	1	pint.

Syntol Oil of Vanilla.

Vanillin	7½	drams.
Coumarin	½	dram.
Cologne spirits	8	ounces.

Syntol Lilac.

Tincture of jasmine	8	ounces.
Tincture of orange	1	ounce.
Tincture of vanilla, 4 to gallon	4	ounces.
Tincture of civette	1	ounce.
Oil of rose geranium	½	dram.
Oil of muguet	2	ounces.
Oil of terpineol	1	ounce.

Syntol Crabapple.

Tincture of tuberose	8	ounces.
Tincture of violet, 1 to 8	2	ounces.
Tincture of musk	4	ounces.
Oil of terpineol	1	ounce.
Oil of bois de rose	½	ounce.
Oil of hyacinth, geraniol	½	ounce.

Syntol May Lily.

Lily, concd	1	ounce.
Cologne spirits	16	ounces.

To make the tinctures or washings from concrete essences, take one ounce of the latter, warm it by placing the container in warm water, then pour it into one gallon of warm cologne spirits. Do not warm the concrete essence nor the cologne spirits to more than one hundred. Shake well, and you have a gallon of fine washings or tincture.

To make tincture of vanilla for perfumery purposes use 4 ounces of vanillin to 1 gallon of cologne spirits. To make the other tinctures, see perfumery tinctures in non-secret formula book.

Syntol Heliotrope.

Heliotropol	1	ounce.
Coumarin	2	drams.
Oil of bergamot	1	dram.
Oil of sandalwood	1	dram.
Oil of hyacinth, geraniol	2	drams.
Oil of bitter almonds	5	drops.
Oil of cloves	10	drops.
Cologne spirits, to make	16	ounces.

Syntol Violet.

Ionone	1	ounce.
Tincture of cassie	8	ounces.
Tincture of rose	5	ounces.
Tincture of civette	2	ounces.
Oil of sandalwood	10	drops.
Vanillin (DeLaires)	½	dram.
Coumarin	½	dram.

Syntol Rose Geranium.

Oil of rose geranium	1½	ounces.
Oil of sandalwood	¼	ounce.
Tincture of rose, to mak	16	ounces.

Massage Cream.

Mutton suet	42½	ounces.
Cocoanut oil	7½	ounces.
Potash lye	6¼	ounces.
Water	28¼	ounces.

Saponify in the usual manner, see soapmaking; when saponification has taken place add:

4 ounces magnesia carbonate.
1 ounce oil rose geranium.

If coloring is required add:

1 ounce solution of carmine.
2 drams solution of Bismarck brown.

Oriental Bouquet Extract, No. 2.

Tuberose	2 pints.
Oil rose	3 drams.
Oil geranium rose	3 drams.
Oil santal-wood	3 drams.
Oil bergamot	2 drams.
Oil cassia	2 drams.
Powdered coumarin	1 dram.
Spirits to make	1 gallon.

Color, olive.

Orange Blossoms Extract, No. 2.

Orange washing	2 pints.
Spirits	4 pints.
Oil sweet orange	1 drachm.
Oil neroli	2 drachms.
Coumarin	2 drachms.
Spirits to make	1 gallon.

Color, pale yellow.

Jockey Club Extract, No. 2.

Tincture jasmin	16 ounces.
Tincture orange	12 ounces.
Tincture rose	12 ounces.
Tincture cassie	6 ounces.
Tincture civette	4 ounces.
Tincture vanilla	1 ounce.
Coumarin	½ drachm.
Otto rose	1 drachm.
Spirits, 188 per cent.	70 ounces.
Water	8 ounces.

Carnation Pink Extract, No. 2.

Spirits, 188 per cent.	4 pints.
Oil terpineol	3 ounces.
Oil cloves	1 drachm.
Vanillin	2 drachms.
Oeillet	1 ounce.
Glycerine	8 ounce.
Spirits, to make	1 gallon.

Color, golden.

Rose Geranium Extract, No. 2.

Oil rose geranium	1½ ounces.
Oil santalwood	¼ ounce.
Oil bergamot	¼ ounce.
Cologne spirits	1 gallon.
Coumarin	2 drachms.

Color, pale green.

Violet Extract, No. 2.

Tincture cassie	2 pints.
Tincture ionone, 2 ozs. to gallon	½ pound.
Spirits	5 pints.
Vanillin	1 drachm.
Coumarin	1½ drachms.
Tincture civette	4 ounces.
Oil muguet	½ drachm.
Oil sandalwood	½ drachm.

Color, olive.

White Lilac Extract, No. 2.

Oil terpineol	3 ounces.
Hyacinth, geraniol	1 dram.
Tincture jasmin	8 ounces.
Tincture orange	8 ounces.
Tincture civette	1 ounce.
Powdered vanillin	1 dram.
Powdered coumarin	1 dram.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Color, heliotrope.

Heliotrope Extract, No. 2.

Heliotropin	1 ounce.
Coumarin	2 drachms.
Vanillin	1 drachm.
Bergamot	1 drachm.
Oil santal	1 drachm.
Hyacinth	1 drachm.
Oil bitter almonds	5 drops.
Cloves	10 drops.

Glycerine ..... 6 ounces.
Spirits to make..... 1 gallon.
Color, heliotrope.

White Rose Extract, No. 2.

Oil of rose..... ¼ ounce.
Oil of rose geranium..... ¼ ounce.
Oil of bergamot .....⅛ ounce.
Oil of patchouli .....20 drops.
Vanillin ..... ⅛ ounce.
Coumarin ..... ⅛ ounce.
Glycerine ..... 6 ounces.
Cologne spirits to make.... 8 pints.
Color, light green.

Crab Apple Extract, No. 2.

Oil terpineol ..... 1 ounce.
Oil rosewood ..... 1 ounce.
Hyacinth, geraniol ..... ⅛ ounce.
Vanillin ..... ⅛ ounce.
Coumarin ..... ⅛ ounce.
Spirits ..... 8 pints.
Color, olive.

Ylang Ylang Extract.

Tincture cassie ..... 2 pints.
Tincture jasmin ..... 8 ounces.
Oil rose ..... 1 drachm.
Oil orange, sweet..... 1 drachm.
Oil bergamot ..... 2 drachms.
Oil hyacinth geraniol .... 1 drachm.
Spirits to make..... 1 gallon.

Lily of the Valley, No. 2.

Concrete lily of the valley. ¾ ounce.
Spirits to make ..... 1 gallon.
Color, pale green.

Extract Frangipanni, No. 2.

Oil rose ..... ¼ ounce.
Oil santalwood ..... ½ ounce.
Oil bergamot ..... ½ ounce.
Oil orange, sweet..... ¼ ounce.
Powdered vanillin ..... 1 drachm.
Powdered coumarin ..... 1 drachm.
Spirits to make..... 1 gallon.
Color, gold and yellow.

New Mown Hay Extract, No. 2.

Tincture cassie ..... 1 pint.
Tincture orris ..... 1 pint.
Spirits ..... 6 pints.
Oil santalwood .....30 drops.
Oil cloves .....15 drops.
Oil neroli .....30 drops.
Rose geranium .....60 drops.
Powdered coumarin .....½ ounce.

Jasmine Extract, No. 2.

Tincture jasmin ..... 2 pints.
Tincture orange ..... 12 ounces.
Tincture cassie ..... 4 ounces.
Cologne spirits ..... 4 pints.
Vanillin ..... 1 drachm.
Coumarin ..... 1 drachm.
Water ..... ½ pint.
Cologne spirits to make.... 1 gallon.
Color, reddish brown.

Concentrated White Rose, No. 2.

Oil rose (synthetic)..... ½ ounce.
Concentrated rose ..... ½ ounce.
Concentrated jasmin ..... ¼ ounce.
Tincture cassie ..... 7 ounces.
Oil santal ..... 2 drachms.
Oil patchouli ..... 15 drops.
Alcohol ..... 8 ounces.

Violet Concentrated, No. 2.

Solution ionone ..... 1 ounce.
Tincture rose ..... 24 ounces.
Tincture cassie ..... 24 ounces.
Vanillin ..... 1 drachm.
Coumarin ..... 2 drachms.
Tincture civette ..... 4 ounces.
Cologne spirits ..... 1 gallon.
Color, green, q. s.

Violet Water, Cheap.

Ionone ..... 3 drams.
Spirits, 188 per cent..... 24 ounces.

Cassie washings	4 ounces.
Rose washings	2 ounces.
Hyacinth geraniol	½ dram.
Water	16 ounces.
Coumarin	½ dram.

Color, light green.

Tooth Wash, Odentolina.

Soap bark	16 ounces.
Hot water	128 ounces.

Let the bark and hot water stand for 24 hours and filter; run hot water through until the product measures one gallon.

Alcohol	64 ounces.
Menthol	40 grains.
Boric acid, powdered	1¼ ounces.
Simple syrup	16 ounces.
Glycerine	6 ounces.
Oil of wintergreen, synthetic	2 drachms.
Oil of peppermint	15 drops.
Oil of Cloves	30 drops.
Oil of cassia	15 drops.
Saccharin	15 grains.

Dissolve the boric acid, menthol and saccharin in half of the alcohol. Dissolve the oils in the remainder of the alcohol and add thereto one-half ounce of carbonate of magnesia and 64 ounces of water. Let stand for twenty-four hours and filter. Mix all together, filter and color cherry-red, using burnt sugar coloring, one part; tincture of cochineal, two parts.

Product should measure two gallons.

Disappearing Cream.

Boiling water	48 ounces.
Quince seed, clean	2 ounces.

Pour boiling water on the quince seed. Let stand until cold, with occasional stirring; strain well, and dissolve in the liquid, ¼ ounce of benzoate of soda. Then heat the liquid, taking care not to scorch, and dissolve in it four pounds of stearic acid.

Place five pints of water in a large graniteware vessel and dissolve in it 2 ounces of dried carbonate of soda, U. S. P., and powdered borax, 1½ ounces; bring to a boil, then add this slowly and constantly stirring, to the quince seed mixture. When effervescence ceases, remove from hot water bath and stir well until it thickens; then add a mixture of warm water, 120 degrees F., 1 gallon; glycerine, 4 ounces; peroxide of hydrogen, ½ pint. If the addition of the latter mixture should cause lumpiness, return to bath and heat, with stirring until it becomes smooth.

Perfume with any desired perfume. (See perfumery formulas.)

Cheap Complexion Lotion for Freckles, Etc.

Epsom salts	16 ounces.
Zinc sulphate	1 ounce.
Rose water	2 gallons.

Dissolve.

Apply with sponge; allow to dry on face; when dry, remove excess, if any, with a soft rag. May be colored pink, yellow, purple or green with aniline.

Complexion Powder, Solid.

Precipitated chalk	16 ounces.
Bismuth oxychloride	8 ounces.
Talcum powder	16 ounces.
Glycerine	4 ounces.

Rose water q. s. to make into paste; mix the powders well; make into a stiff paste with the glycerine and rose water; pour into aluminum or glass jars or into round tin moulds, from which remove when dry and put into paper boxes; can be made a rose tint with solution of carmine or rose aniline. For a cheaper article replace the 8 ounces of bismuth oxychloride with 16 ounces of C. P. zinc oxide.

Directions.—Rub a wet rag over the paste and apply to the skin. Remove any excess with a silk handkerchief.

Bay Rum Concrete for Barbers.

Oil of bay	4	ounces.
Oil of cloves	1	ounce.
Terpineol	7	ounces.
Borax, powdered	2	pounds.
Sulphate of magnesia, dried	2½	pounds.
Bismarck brown aniline	1	drachm.
Dissolve in alcohol	2	ounces.

Mix the borax and magnesia sulphate; pour on the oils, and the Bismarck brown, to color; mix well and put into two ounce tin boxes. Each box is sufficient to make one gallon of bay rum of excellent quality.

Directions.—Put the contents of the box into a gallon bottle; pour in a mixture of alcohol and water, equal parts; shake well and let it stand for a week. The boxes sell for 50 cents each. Any toilet water or perfume may be put up in this manner. (See perfume concentrates) using the proper colors for same, such as green for violet, red for carnation pink and red rose, half of the above amount of Bismarck brown for a pale straw color, etc.

Fatted Face Powder.

Dissolve lanolin, or other wool fat, in acetone q. s.; pour the solution on precipitated chalk or carbonate of magnesia; spread out to dry and let the odor of the acetone evaporate; then mix in with the regular toilet powder. Castor oil is cheaper and may be used instead of woolfat. Cut the castor oil in perfumed alcohol or, preferably, strong cologne spirits.

Shampoo Powder.

Soda bicarbonate	½	pound.
Castile soap, white, powd.	½	pound.
Powdered borax	6	ounces.
Oil lemon grass	1	drachm.

Pomade Petroleum.

White petrolatum oil	10	ounces.
Ceresine wax	1	ounce.
Artificial musk	5	grains.

Melt together, stir constantly until cool. Perfume with 1 drachm of oil of lavender.

Bismuth Hair Dye.

Citrate of bismuth	1	ounce.
Aqua ammonia	q. s.	
Hyposulphite of soda	½	ounce.
Alcohol	3	ounces.
Glycerine	½	ounce.
Water to complete	16	ounces.

Rub the citrate into a thin paste with lukewarm water and add aqua ammonia q. s. to dissolve. In the solution dissolve the hyposulphite of soda; filter and complete the measure, adding the alcohol last. The hair or beard, when saturated with this liquid, acquires after 5 or 6 hours a deep chestnut color. Upon washing the hair this color disappears, giving place to a delicate flaxen color. By repeating the operation daily a stage is arrived at when, after passing through all the intermediate shades, the deep chestnut color remains persistent, but not as permanent as the silver preparations.

Tooth Paste.

Precipitated chalk	22	ounces.
Powdered castile soap	4	ounces.
Powdered orris root	6	ounces.
Oil eucalyptus	1	drachm.
Oil peppermint	20	drops.
Oil cinnamon	20	drops.
Saccharin	15	grains.

Dissolve in 1 ounce of alcohol.

Glycerine	24	ounces.
Water	4	ounces.

Mix together q. s. to make thick paste.

Hair Regenerator, No. 1 Bottle.

Pyrogallic acid ..... 1 ounce.
Alcohol ..... 4 ounces.
Distilled water to make.....20 ounces

No. 2 Bottle.

Copper sulphate ..... 1 ounce.
Aqua ammonia q. s. or say.. 4 ounces.
Distilled water to make... 20 ounces.

Directions for using: The same as for the silver preparations, applying No. 1 first, then No. 2. The copper preparations are poisonous and not to be recommended. The silver dyes, when properly neutralized with ammonia water, are safe, permanent and give better satisfaction. The copper dye is useful for dead hair, switches, etc. Various shades may be produced by diluting with water.

Cucumber Juice.

Grate washed cucumbers, unpeeled; press out the juice; to each ounce of juice add ½ ounce of alcohol; let stand for 24 hours and filter.

Cucumber Cream.

Castor oil ..... 2½ ounces.
Powdered castile soap, white ..... ¾ ounce.
Powdered borax ..... ¼ ounce.
Water ..... 16 ounces.

Boil for 10 minutes with constant stirring; then incorporate thoroughly a mixture of

Water ..... 10 ounces.
Glycerine ..... 4 ounces.
Alcohol ..... 4 ounces.
Cucumber juice ..... 2 ounces.
Perfume with rose oil q. s. 1 drachm.

Violet Talcum Powder.

Powdered talcum of good quality .....55 pounds.
Powdered boric acid ..... 6½ pounds.
Zinc oxide ..... 1 pound.
Perfume as below..... ½ pound.

Violet Talcum Perfume.

Ionone, 10 per cent..... 1 drachm.
Oil of kananga ..... 1 drachm.
Oil of bergamot..... ½ ounce.
Musk, artificial ..... 5 grains.
Vanillin ..... 2½ drachms.
Glycerine ..... 5 ounces.
Alcohol .....10 ounces.
Tincture of orris to make 2½ pints.

Tincture of orris may be made by macerating 1½ pounds of powdered orris root in 2½ pints of 188 per cent cologne spirits for 10 days, percolate and obtain 2½ pints of percolate by the addition of cologne spirits.

For Falling Hair.

Castor oil ..... ½ ounce.
Aqua ammonia, 4 F..... ½ ounce.
Spirit of nutmeg..... 8 ounces.
Salicylic acid ..... 20 grains.

Dermalina Lotion.

Nitric acid, C. P..... 3½ ounces.
Hydrocyanic acid, dilute.. 4 ounces.
Corrosive sublimate..... ¼ ounce.
Carbolic acid ..... ½ ounce.
Pyroligneous acid .....24 ounces.
Glycerine ..... 24 ounces.
Water q. s. to make.....128 ounces

An excellent lotion for diseases of the skin.

Warren's Hair Restorer.

Acetate of lead..... 12 ounces.
Dissolve in
Water ..... 32 ounces.
Flour sulphur ..... 12 ounces.
Salt ..... 12 ounces.
Powdered borax ..... 12 ounces.

Place in large dish and rub to a smooth paste with

Glycerine ..... 32 fl. ounces.
Alcohol ..... 32 fl. ounces.

Dissolve in the alcohol
Oil of rosemary ..... ¼ ounce.
Oil of bergamot..... ½ ounce.
Fluid extract of pale cinchona bark..... 24 ounces.
Fluid extract of burdock root ..... 24 ounces.
Mixed with
Glycerine ..... 64 fl. ounces.
Water for rinsing vessels ..... 64 ounces.

Mix all together and add enough water to make 6 gallons (128 ounces to gallon).

This is a splendid hair preparation and has had a large sale.

Persian Balm Hair Colorer.

Lead and sulphur clear solution.
Acetate of lead..... 5 ounces.
Hyposulphite of soda.... 20 ounces.
Glycerine ..... 15 fl. ounces.
Rose water .....160 fl. ounces.
Tincture of cantharides.. 16 fl. ounces.
Strong acetic acid..... ¼ fl. ounce.

Dissolve the acetate of lead in half of the rosewater and add the ¼ ounce of strong acetic acid. In a separate vessel dissolve the hyposulphite of soda, add the glycerine and tincture of cantharides; then pour the lead solution into the solution of hyposulphite of soda, and filter. This makes a very good preparation for darkening the hair, but it should be prepared when needed and kept from the light. Not more than two or three months' supply should be made at once, as it deteriorates by long keeping. Therefore, make small quantities at a time and push it while it is fresh.

Cure for Baldness.

Resorcin ..... 2 drachms.
Salicylic acid .....½ to 1 drachm.
Castor oil .....½ to 1½ drachms.
Bergamot oil ..... 1 drachm.
Alcohol to..... 6 ounces.

Dandruff Cream.

Petrolatum, yellow ..... 7½ pounds.
Hard paraffin ..... 1 pound.
Flour sulphur ..... 4 ounces.
Salicylic acid ..... 4 ounces.
Perfume to suit.

Hair Tea.

Violet flowers ..... 5 ounces.
Lavender flowers ..... 5 ounces.
Rosemary ..... 5 ounces.
Bay leaves ..... 3 ounces.
Rose petals ..... 2 ounces.
Sage leaves ..... 1 ounce.
Oil rose geranium ..... 1½ ounces.
Alcohol ..... 2½ ounces.
Nitrate lead ..... 1 ounce.

Dissolve nitrate lead in 3 ounces water. Sulphur, 3 ounces in 3 ounces water, to be added to 2 pounds of above mixture.

Quinine Cream Hair Strengthener.

Quinine sulphate ..... ¼ ounce.
Sulphur flour ..... ¼ ounce.
Acid salicylic ..... 1 ounce.
Glycerine ..... 2 ounces.
Cologne spirits, 188 per ct. 8 ounces.
Oil petit grain..... 30 drops.
Sulphuric acid ..... 1 drachm
Water ..... 22 ounces.

Put the quinine, acid salicylic and the oil in the cologne spirits; shake until dissolved. Rub the sulphur with the glycerine, add ½ the water; mix with the other; add the sulphuric acid to the remaining water and mix all together.

Arnica Jelly.

Gelatin in transparent sheets ..... 1 ounce.
Glycerine ..... 6 fl. ounces.
Tincture of arnica flowers ..... 4 ounces.
Water .....15 ounces.

Lilac, Concentrated.

Tinct. jasmine	8 ounces.
Tinct. orange	1 ounce.
Tinct. vanilla	4 ounces.
Oil geranium rose	½ dram.
Oil muguet	2 ounces.
Tincture civette	1 ounce.
Oil terpineol	1 ounce.

Heliotrope, Concentrated.

Heliotropol	1 ounce.
Coumarin	2 drachms.
Oil bergamot	1 drachm.
Oil santal	1 drachm.
Oil hyacinth geraniol	2 drachms.
Oil bitter almonds	5 drops.
Oil cloves	10 drops.
Spirits to make	16 ounces.

Jockey Club, Extra.

Tincture Jasmin	15 ounces.
Tinct. orange flowers	12 ounces.
Tincture rose	12 ounces.
Tincture cassie	6 ounces.
Coumarin	10 grains.
Tincture musk	4 ounces.
Tincture civette	2 ounces.
Tincture vanilla	1 ounce.
Oil rose	1 drachm
Spirits	8 ounces.
Water	4 ounces.

Lilac, Concentrated.

Tincture jasmin	8 ounces.
Tincture orange	1 ounce.
Tinct. vanillin, 4 to gal.	4 ounces.
Tincture civette	1 ounce.
Oil rose geranium	1 drachm.
Oil muguet	2 ounces.

Crab Apple, Concentrated.

Tuberose washings	8 ounces.
Concentrated violet	1 ounce.
Oil terpineol	1 ounce.
Hyacinth geraniol	½ ounce.
Tinct. musk	4 ounces.
Oil rosewood	½ ounce.

Jockey Club Concrete.

Oil of bergamot	2 ounces.
Oil of lavender	½ ounce.
Oil of rose geranium	1 ounce.
Oil of carraway	1 drachm.

Proceed as above. By adding fifteen grains of bichloride of mercury to each gallon and suitable coloring matter. Very good antiseptic toilet waters may be produced at little cost.

Dandruff Cream.

Petrolatum, yellow	8 pounds.
Salol	1 pound.
Oil of bergamot	1 ounce.
Oil of citronelle	1 drachm.
Oil of carraway	1 drachm.

Dissolve the salol in the petrolatum by the aid of a gentle heat. When cool, add the oils.

White Rose Extract, Extra.

Violet tincture	24 ounces.
Jasmin tincture	24 ounces.
Cassie tincture	12 ounces.
Rose tincture	48 ounces.
Ionone	¼ ounce.
Oil of patchouli	10 drops.
Oil of rose	3 drachms.
Oil of sandalwood	2 drachms.
Tincture musk, artificial	8 ounces.
Cologne spirits to make	128 ounces.

SECOND QUALITY EXTRACTS.

Ylang Ylang Extract.

Tincture of cassie	2 pints.
Tincture of jasmine	2 pints.
Oil of rose	1 dram.
Oil of orange, sweet	1 dram.
Oil of bergamot	2 drams.
Oil of hyacinth with jonquil	1 dram.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Lily of the Valley.

Concrete lily of the valley	¾ ounce.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Stuart Bouquet.

Otto rose	¼ ounce.
Oil of sandalwood	½ dram.
Oil of bergamot	½ ounce.
Tincture of cassie	8 ounces.
Vanillin	1 dram.
Tincture of musk	1 ounce.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Frangipanni.

Otto rose	¼ ounce.
Oil of sandalwood	½ ounce.
Oil of bergamot	½ ounce.
Oil of orange, sweet	¼ ounce.
Vanillin	1 dram.
Coumarin	1 dram.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Color, golden yellow.

Carnation Pink.

Cologne spirits	4 pints.
Oil of terpineol	3 ounces.
Vanillin	2 drams.
Oil of cloves	1 dram.
Oeillet	1 ounce.
Glycerine	8 ounces.
Spirits to make	1 gallon.

Color, golden.

Oriental Bouquet.

Tuberose	2 pints.
Oil of rose geranium	3 drams.
Oil of sandalwood	3 drams.
Oil of bergamot	2 drams.
Oil of cassia	2 drams.
Coumarin	1 dram.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Color, olive.

White Lilac.

Oil of terpineol	3 ounces.
Hyacinth, geraniol	1 dram.
Tincture of jasmine	8 ounces.
Tincture of orange flowers	8 ounces.
Vanillin	1 dram.
Coumarin	1 dram.
Tincture musk	8 ounces.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Color, heliotrope.

Heliotrope.

Heliotropin	1 ounce.
Coumarin	2 drams.
Vanillin	1 dram.
Bergamot	1 dram.
Oil of sandal	1 dram.
Hyacinth, geraniol	4 drams.
Oil of bitter almonds	5 drops.
Oil of cloves	10 drops.
Glycerine	6 ounces.
Spirits to make	1 gallon.

Color, heliotrope.

White Rose.

Oil of rose	¼ ounce.
Oil of rose geranium	¼ ounce.
Oil of bergamot	⅛ ounce.
Oil of patchouli	20 drops.
Vanillin	⅛ ounce.
Coumarin	⅛ ounce.
Glycerine	6 ounces.
Cologne spirits, to make	1 gallon.

Color, light green.

Crabapple.

Oil of terpineol	1 ounce.
Oil of bois de rose	1 ounce.
Hyacinth with jonquil	⅛ ounce.
Vanillin	⅛ ounce.
Coumarin	⅛ ounce.
Glycerine	6 ounces.
Spirits, to make	1 gallon.

Color, olive.

Zinc sulphate ..... 2 ounces.
Acid carbolic crystals..... 1 dram.
Morphine sulphate ..... ½ ounce.
Water ..... 864 ounces.
Do not filter.

Syrup of Chocolate and Coffee.

Baker's cocoa..... 1 pound.
Alcohol ..... 8 ounces.
Glycerine ..... 4 ounces.
Water ..... 4 ounces.
Macerate the cocoa with the alcohol, glycerine and water; percolate with diluted alcohol until 32 ounces have passed. One to 2 ounces of this extract to 1 gallon of syrup, coffee, same process as above.

Magnesia Sulphate, Tasteless Solution.

Sulphate magnesia ..... 1 ounce.
Water ..... 16 ounces.
Coffee ..... 2½ drams.
Boil for 2 minutes; let stand 10 minutes and strain.

Epithelioma Plaster.

Solid extract of May apple... 1 ounce.
Solid extract of blood root... 1 ounce.
Solid extract of poke root.... 1 ounce.
Chromic acid ..... 1 ounce.
Carbon tetrachloride ..... 1 ounce.
Make into a paste, using a little hot water to soften the extracts should it be necessary. Spread the plaster on a linen cloth and apply twice daily, morning and evening.

Thymol Iodide.

Thymol ..... 1 ounce, av.
Potassium iodide...1 ounce, 70 grs. av.
Sodium hydrate, pure.....1 ounce, av.
Distilled water to make..19 ounces, fl.
Solution of chlorinated soda, sufficient or about .....58 ounces. fl.

Dissolve the solids in the water and gradually add the chlorinated soda solution; collect the precipitate on filter and wash with water until free from chlorides. Dry the precipitate carefully at a temperature not to exceed 27 degrees C.- Cincinnati Acad. Pharm.

Chill Tonic, Without Arsenic.

Quinine sulphate .....256 grains.
Cinchonidine sulphate.....128 grains.
Cinchonine sulphate .....128 grains.
Cudbear tincture ..... 4 ounces.
Burnt sugar coloring..... ½ ounce.
Tincture citro chloride of iron ..... 4 ounces.
Corrosive sublimate ..... 4 grains.
Citric acid ..... ½ ounce.
Simple syrup ..... 1 quart.
Aromatic elixir q. s. to make .....128 ounces.
Dose.—1 tablespoonful for adults.

McNamara's Cancer Powder.

Powdered arsenous acid... 1 ounce.
Calomel ..... 8 ounces.
Morphine sulphate ..... ¼ ounce.
White dextrine ..... 16 ounces.
Flour ..... 16 ounces.
Mix well.
Make into a paste and apply.

A. B. C. Liniment.

Aconite liniment, British..... 1 ounce.
Belladonna liniment, British. 1 ounce.
Chloroform liniment, British. 1 ounce.
Mix.

Methyl Salicylate Liniment, Compd.

Oil of wintergreen synthetic.16 ounces.
Oil of cajeput..... 16 ounces.
Oil of peppermint ..... 4 ounces.
White mineral oil..... 92 ounces.
Color red with alkanet root or aniline red. Soluble in oil.

Chrysarobin Ointment.

Chrysarobin ..... 1½ drams.
White petrolatum ..... 4 ounces.
Mix well.

Salts of Sorrel.

Cream of tartar.....2 ounces.
Oxalic acid.....1 ounce.
Mix well. Useful for removing stains of ink made from galls.

Embalming Fluid (Dr. Tilton).

Solution of chloride of sodium (common salt)... 96 ounces.
(6 ounces to 16 ounces water)
Solution of zinc chloride U. S. P.....128 ounces.
Solution of corrosive sublimate ..... 64 ounces.
(1 ounce to 16 ounces water)
Carbolic acid crystals..... 8 ounces.
Glycerine ..... 24 ounces.
Alcohol ..... 64 ounces.
Mix the glycerin and carbolic acid; mix the chloride of sodium solution with the corrosive sublimate; add the alcohol. This makes 384 ounces, or sufficient for a body weighing 150 pounds.

Bed Bug Destroyer. A

Mercurial ointment (1-3 mercury) ..... 4 ounces.
Turpentine .....32 ounces.
Mix. Brush into the cracks. This is a good preparation and inexpensive.

Bed Bug Destroyer. B

Napthaline ..... ½ pound.
Oil of cedarwood .....2 ounces.
Gasoline .....1 gallon.
Color red with oil soluble aniline, or alkanet root. Put caution label on package, "Inflammable."

Benzin, Petroleum, Purified, U. S. P.

Potassium permanganate ..... 1¼ av. ounces.
Sodium hydroxide.... ¼ av. ounce.
Sulphuric acid..... 8 fl. ounces.
Petroleum benzin.....128 ounces.
Add the acid to 70 fluid ounces of water and when the mixture has become cold pour it into a bottle having the capacity of about 2 gallons. Add 1 av. ounce of potassium permanganate and agitate until it is dissolved; then add the benzin in four portions, shaking the liquid after each addition. Allow the liquids to remain in contact for 24 hours, shaking the bottle at frequent intervals; then decant the benzin into another bottle of the same capacity, and having dissolved ¼ av. ounce of potassium permanganate in 32 fluid ounces of water, in which the caustic soda has been previously dissolved, mix the liquids and agitate the mixture frequently during several hours; then decant, repeat the washing with water, and again decant the purified benzin.—U. S. P.

Fire Extinguishers' Liquid.

Chloride of sodium..... 5 ounces.
Chloride of magnesium.....16 ounces.
Muriate of ammonia..... 8 ounces.
Nitrate of sodium..... 4 ounces.
Water .....80 ounces.

Fireproofing Solution.

Tungstate of soda.....16 ounces.
Water .....32 ounces.
Dissolve and add
Phosphate of ammonia..... 3 ounces.
Dissolve in water.....24 ounces.
Mix the two solutions. Dip the clothes in the solution, wring out, dry and iron with a moderately heated flat iron.

Freezing Mixture. A

Sodium sulphate, granulated. 8 ounces.
Potassium nitrate, granulated 8 ounces.
Ammonium muriate, granulated ..... 8 ounces.
Water .....30 ounces.

Freezing Mixture. B

Ammonium muriate, granulated .....16 ounces.
Sodium chloride (common salt) .....32 ounces.
Snow or ice.....80 ounces.

Boiler Incrustation Preventive. A

Caustic potash.....2 pounds.
Caustic soda.....2 pounds.
Water .....1 gallon.
Boil together and mix with the following:
Gum catechu.....2 pounds.
Water, boiling.....1 gallon.

Boiler Incrustation Preventive. B

Phosphate of soda.....4 pounds.
Boiling water.....1 gallon.
Make a solution. Phosphate of soda converts calcium carbonate into phosphates and neutralizes acids, and is also a water softener.

Aquarium Cement.

Litharge .....4 ounces.
Venetian red.....4 ounces.
Plaster of Paris.....4 ounces.
Mix and make into a stiff paste with boiled linseed oil.

Rubber Cement.

Gutta percha in fine shavings.1 ounce.
Bisulphide of carbon.....5 ounces.
Dissolve. Useful for patching shoes, etc.

Cement for Enamel Letters.

Dry white lead.....2 ounces.
Litharge ..... ½ ounce.
Make into a paste with turpentine damar varnish.

Straw Hats to Clean. A

No. 1—
Sodium hyposulphite..... 2 ounces.
Dissolved in
Water .....16 ounces.
No. 2—
Acid oxalic..... ½ ounce.
Dissolved in
Water .....16 ounces.
Sponge or brush the hat well with the No. 1 solution; set aside to dry slowly; then sponge with the No. 2 solution; iron the hat with a flat iron, moderate heat.

Straw Hat Cleaner. B

No. 1—
Liquor potassa..... 4 ounces.
Water .....12 ounces.
Sponge or brush the hat well with the above; then apply No. 2—
Hydrogen peroxide.....sufficient.

Flashlight Powder.

Finely powdered magnesium.5 ounces.
Powdered aluminum.....5 ounces.
Powdered chlorate of potash.1 ounce.
Mix carefully. The powdered magnesium may be used alone, but it is more expensive.

Aromatic Chalk Powder.

Powdered nutmegs..... 1½ ounces.
Powdered cardamom..... ½ ounce.
Powdered cloves..... ¾ ounce.
Powdered Spanish saffron. 1½ ounces.
Powdered cinnamon..... 2 ounces.
Powdered prepared chalk. 6 ounces.
Powdered sugar.....13 ounces.

Gold-Plating Powder.

Chloride of gold.....1 dram.
Cyanide of potassium..... ¼ ounce.
Cream of tartar..... ½ dram.
Chalk precipitated.....1 dram.
Make into a creamy paste with water and apply to the metal; have the metal free from grease or dirt of any kind.

Ice Cream Powder—Chocolate.

Sugar, granulated..... 8 ounces.
Dextrin, white ..... 1 ounce.
Gelatine, powdered .....¼ ounce.
Chocolate, powd'd, chemists. ¼ ounce.
Mix.

Directions: Take six ounces of the above mixture, add to one quart of cream and milk mixed, or one quart of milk, or evaporated cream 8 ounces, well mixed with 24 ounces of water. Place the powder in a smooth bowl and pour, stirring well to rub out lumps, one-half pint of the liquid to be used. Add the remainder and stir until all is dissolved. Place in freezer and turn rapidly and continually until frozen. The cream should be let stand for two hours before using.

The above will make about two quarts of ice cream chocolate.

Ice Cream Powder, Lemon, Etc.

Sugar, granulated .....8 ounces.
Dextrin, white .....1¼ ounces.
Gelatine, powdered ..... ¼ ounce.
Oil of lemon.....5 drops.
Drop the oil on the sugar and mix in well.

Directions the same as for the chocolate powder.

Ice Cream Powder, Vanilla, Strawberry, Raspberry, Etc., Etc.

May be made in the same manner as the lemon powder. For vanilla use 1 dram of tincture of vanillin dropped on the sugar. Raspberry, strawberry, banana, pineapple, etc., pour 1 dram of the desired flavor on the sugar and use the red color for raspberry and strawberry, light yellow for pineapple and banana. Have your materials dry before mixing. Keep the powders in a dry place. Should they become caked their efficacy will be unimpaired.

Ice Cream Foam for Bulking Ice Cream.

Egg albumen .....1 ounce.
Gelatine, powdered .....1 ounce.
Dextrine, white, powdered..3 ounces.
Mix well.

Directions: Add the above to granulated sugar, 3½ pounds; fresh cream, milk or milk and cream mixed, 2½ gallons. Add the powder to the dry sugar. Mix well and add sufficient liquid to moisten. Rub to a smooth, thin paste, then add the balance of your liquid. Flavor as required and place in the freezer.

For fruit creams add one to two quarts of fruit run through a coarse sieve, and add one pound of granulated sugar to each quart of fruit. Do not add the fruit until the cream is half frozen. When the fruit is added turn the freezer slow until finished.

Lemon Ice Cream.

Ice cream foam..... 2 ounces.
Juice of lemons..... 12 ounces.
Water .....128 ounces.
Granulated sugar.....3½ pounds.
Add the juice of the 12 lemons to the gallon of water. Mix the sugar with the ice cream foam. Add lemon water to the sugar and foam mixture to make into smooth paste. Add the remainder of the lemon water. When partly frozen add the whites of four eggs beaten to a stiff froth. Turn freezer slow until finished.

Face Lotion.

Gum tragacanth, powd'd. 3 ounces.
Water, boiling .....64 fl. ounces.
Rub the gum into a smooth paste, with cold water. Let stand for 12 hours and dissolve in the boiling water, and add:
Chlorate of potash, pow.. 8 ounces.
Glycerine .....64 fl. ounces.

Oil of rosemary..... 5 drops.
Oil of cassia..... 5 drops.
Oil of rose..... 5 drops.

Add the oils to ½ ounce of alcohol. Add to the glycerine and mix well.

This is an excellent application for chapped hands, sore nipples, sunburn, abraded surfaces, etc.

Quinine Hair Darkener.

Lead nitrate ..... 1 dram.
Sulphur ..... 1 dram.
Common salt .....½ dram.
Borax, powdered ..... 1 dram.
Glycerine ..... 2 drams.
Tannin ..... 1 dram.
Quinine muriate .....½ dram.
Alcohol ..... 2 ounces.
Water .....10 ounces.

Teaberry Hair Grower.

Quinine muriate ..... 1 dram.
Oil of wintergreen..... 1 ounce.
Alcohol .....10 ounces.
Glycerine ..... 1 ounce.
Water ..... 5 ounces
Sodium chloride ..... 2 ounces.

Dissolve the quinine and salt in the water. Add the glycerine. Dissolve the oil of wintergreen in the alcohol and mix.

The Sauce That's Just as Good.

African ginger, rough ground ..... 1 ounce.
Nutmegs, rough ground.... 2 ounces.
Capsicum, rough ground...½ ounce.
Alspice, rough ground.....½ ounce.
Black pepper, rough ground 1 ounce.
Assafoetida, powdered.....¼ ounce.
Garlic, well bruised.....½ ounce.
Tartaric acid .....½ ounce.
Salt ..... 1 ounce.
Molasses ..... 5 ounces.
Acetic acid, 60 per cent....10 ounces.
Burnt sugar coloring..... 2 ounces.
Water .....30 ounces.

Mix the spices, place them in a skillet and heat them to 200 F. Transfer to a crock or wide mouth jar and pour in the 10 ounces of acetic acid. Let the spices macerate for 3 days. Dissolve the tartaric acid and salt in the water and add. In 30 days strain and add the molasses and sugar coloring.. Acetic acid is better for sauce making than ordinary vinegar, extracts the flavor of the spices better and can be bought very cheap when purchased in quantity.

Acetone in Inoperable Cancer.

Dr. George Gellhorn, of the St. Louis Skin and Cancer Hospital, in an article in the Journal of the American Medical Association, April 27, 1907, recommends the use of acetone in inoperable cancer of the uterus, "to reduce the weakening hemorrhages and to check the intolerable stench of the discharge." I have called the attention of some physicians who have cases of cancer on their list to the article mentioned and suggested that saccharin be dissolved in the acetone to the point of saturation, and this solution applied in the same manner as Dr. Gellhorn directed for acetone. Two cases are reported to be materially benefitted by the saccharin and acetone combined, one physician reports that a paste made of saccharin and acetone had an extremely good effect. It has become a habit with some physicians to look upon new remedies for cancer with a "what's the use" view, on account of frequent disappointments, but the try, try try again plan will win in the long run. The saccharin that is best for use is the so-called "insoluble kind, with a sweetening power 550 times greater than cane sugar.

Aromatic Elixir.

Oil of orange..... 3 drams.
Oil of lemon..... 1 dram.

Oil of cardamom.....1-3 dram.
Oil of cinnamon.....1-3 dram.
Oil of cloves..... 5 drops.
Alcohol .....26 ounces.
Simple syrup .....48 ounces.
Water to make.....128 ounces.
Talc., powdered ..... 2 ounces.

Dissolve the oils in the alcohol and add the 2 ounces of Talc. Shake well and let stand for 24 hours. Add slowly with agitation 48 ounces of water, filter. Add the syrup and enough water to measure 128 ounces.

Aletris Elixir Compound.

Fl. extract aletris ..... 6 ounces.
Fl. extract cramp bark..... 2 ounces.
Fl. extract blue cohosh..... 2 ounces.
Fl. extract squaw vine..... 2 ounces.
Spirit of cloves (oil of cloves, 1 ounce; alcohol 49 ounces) ..... 2 ounces.
Spirit of cassia (oil of cassia, 1 ounce; alcohol, 49 ounces ..... 2 ounces.
Alcohol, diluted .....32 ounces.
Simple syrup .....16 ounces.
California port .....64 ounces.

Mix the spirits with the fluid extracts and diluted alcohol. Mix the syrup with the port wine.

Alkaline Antiseptic.

Soda bicarbonate ..... 1 ounce.
Borax ..... 1 ounce.
Sodium benzoate ..... 1 dram.
Sodium salicylate ..... 20 grains.
Thymol ..... 15 grains.
Eucalyptol ..... 15 minims.
Oil of wintergreen..... 5 minims.
Menthol ..... 5 grains.
Glycerine ..... 8 fl.ounces.
Alcohol ..... 13 ounces.
Water enough to make...128 ounces.
Tincture cudbear and burnt sugar coloring...q. s

Dissolve the thymol, eucalpytol, oil of wintergreen and menthol in the alcohol. To this add the glycerine. Dissolve the salts in 107 ounces of water. Mix. Add the coloring. Let stand for 24 hours and filter with talcum or magnesia. Make up to 128 ounces with clear water.

Alkaline Digestive Compound.

Fl. Ext. Golden Seal. 2 ozs. 149 mins.
Fl. Ext. avena ..... 2 ozs. 149 mins.
Fl. Ext. gentian ..... 1 oz. 75 mins.
Fl. Ext. prickly ash.. 2 ozs. 149 mins.
Fl. Ext. ginger ..... 1 oz. 75 mins.
Soda bicarbonate... 1 oz. 75 grains.
Alcohol dilute .....10 ounces.
Simple syrup .....32 ounces.
Water .....37 ounces.
Alcohol .....16 ounces.
Burnt sugar coloring. 1 ounce.
Simple Elixir, enough to make.128 ounces.

Alkaline Rhubarb with Pancreatin.

Fl. Ext. rhubarb .....4 ozs. 298 mins.
Fl. Ext. Golden Seal....2 ozs. 149 mins.
Fl. Ext. cassia .....1 oz. 330 mins.
Potassium bicarbonate.5 ozs. 372½ grs.
Pancreatin .....205 grains.
Potassium bicarbonate....819 grains.
Peppermint essence, oil of peppermint 1; alcohol 49 ..... 1 ounce.
Simple syrup ..... 32 ounces.
Water ..... 32 ounces.
Simple elixir..... 32 ounces.
Alcohol ..... 16 ounces.

Rub the pancreatin and the 819 grains of potassium bicarbonate in a mortar with 16 ounces of the water and filter. Dissolve the 5 ounces 372½ grains of potassium bicarbonate in the remainder of the water and add to the solution of pancreatin. Add the peppermint essence and alcohol to the simple elixir and fluid extracts. Mix the simple syrup with the bicarbonate of potash and pancreatin solution and Pour with constant stirring into the

mixture of fluid extracts, etc. The addition of 1 ounce of burnt sugar coloring improves the appearance of the goods. Put on shake label.

Iodides Alterative Compound.

Iodide of soda.... 2 ozs. 149 grains.
Iodide of potash.. 2 ozs. 149 grains.
Bromide of potash 2 ozs. 149 grains.
Carbonate of potash ..... 1 oz. 74½ grains.
Sulphate of magnesia ..... 11 ozs. 307½ grains.
Water ..... 32 ounces.
Syrup of sarsaparilla, syrup of stillingia, of each enough to make...128 ounces.

Dissolve the salts in the water and add the syrups.

Antiseptic Powder.

Boric acid .....14 ounces.
Zinc sulphate ..... 2 ounces.
Thymol powdered ..... 8 grains.
Menthol, powdered ..... 7 grains.
Eucalyptol .....10 drops.
Carbolic acid .....10 drops.
Salicylic acid .....40 grains.

Antipyretic Elixir.

Acetanilid ..... 5 ozs. 37½ grains.
Caffeine alkaloid . 1 oz. 74½ grains.
Acetphenetidin ... 1 oz. 74½ grains.
Tartaric acid ....800 grains.
Soda Bicarbonate. 2¼ ounces.

Dissolve the above in glycerine, 32 ounces, heated to 220 F.

Dissolve salol, 1 ounce 74½ grains, oil of orange, sweet, ¼ ounce, in alcohol 32 ounces.

Add this to the glycerine mixture. When the heat has subsided to 120 F. stir well until thoroughly mixed, then add a mixture of

Alcohol .....32 ounces.
Water .....32 ounces.

Use an enameled saucepan for the compounding of this formula. A 16 to 18 quart enameled saucepan will be very useful for this kind of work. Be sure that the enameling is perfect. Do not let this elixir come in contact with iron or it will become black in time.

Solution of Arsenic (Acid).

Arsenous acid .....70 grains.
Diluted hydrochloric acid 6 fl. drams.
Distilled water q. s. to make .....16 fl. ounces.

Solution of Arsenic (Alkaline).

Arsenous acid ..... 70 grains.
Potassium bicarb. .....140 grains.
Distilled water q. s. to make ..... 16 fl. ounces.

Liquid Bismuth and Hydrastia.

Citrate of bismuth and ammonia .....256 grains.
Hydrastis, muriate white alkaloid ..... 15 grains.
Water ..... 8 ounces.
Glycerine ..... 4 ounces.
Alcohol ..... 4 ounces.
Aqua ammonia .....sufficient.

Dissolve the hydrastis in two ounces of water. Mix with the glycerine and alcohol. Dissolve the citrate of bismuth and ammonia in four ounces of water. Let settle and decant the clear liquid. Add a few drops of aqua ammonia to make neutral. Do not put in too much ammonia, as the solution must be neutral, otherwise it will precipitate the hydrastia. The above will represent two grains of bismuth and five grains of hydrastis to the dram.

Aromatic Castor Oil.

Castor oil, brilliant.....119 ounces.
Alcohol ..... 8 ounces.

Oil of peppermint..... 1 ounce.
Saccharin ..... ½ ounce.

Dissolve the saccharin and the oil of peppermint in the alcohol and add it to the castor oil. Mix well in. You may substitute 8 fluid ounces of acetone for the 8 ounces of alcohol if preferred. The saccharin has other names, such as garantose, sugarin, etc. Use the so-called insoluble kind, represented as having 550 times the sweetening power of cane sugar. The oil may be colored by using one of the harmless (free from arsenic) soluble in oil anilines, rubbed up in a mortar with a very small portion of pure oleic acid.

Asthma Remedy.

Tincture of motherwort....32 ounces.
Tincture of lobelia.....32 ounces.
Wine of Ipecac.....32 ounces.
Iodide of potash..... 4 ounces.
Bromide of potash..... 8 ounces.
Syrup of tolu.....32 ounces.

Dissolve the potashes in the tinctures. Add the wine of ipecac and syrup of tolu; color if required.

Baby's Cough Syrup. No. 1.

Bromide of potash, powd'd. 1 ounce.
Chloride of ammonia..... 1 ounce.
Rub in mortar and dissolve
in water .....16 ounces.
Syrup of squills..... 8 ounces.
Syrup of tolu..... 8 ounces.
Syrup of wild cherry..... 8 ounces.
Syrup of senega..... 4 ounces.
Syrup simple .....128 ounces.

Mix. Dose one-half to one teaspoonful when cough is troublesome.

Baby's Cough Syrup. No. 2.

Syrup of squills.....32 ounces.
Wine of ipecac..... 8 ounces.
Ammonia muriate ..... 1 ounce.
Dissolved in
Water ..... 8 ounces.
Balsam of aniseed..... 36 ounces.
Syrup of tolu.....44 ounces.

Dissolve the ammonia muriate in the water and add to the syrups balsam and wine. Color if desired.

Balsam of Aniseed.

Oil of anise..... 3 drams.
Dissolved in
Alcohol ..... 6 ounces.
Simple syrup to make....256 ounces.

Mix well. Let stand 24 hours before using, shaking occasionally.

Buchu Juniper and Acetate of Potash.

Buchu leaves,
ground .....11 ozs. 307½ grains.
Juniper berries,
ground ..... 4 ozs. 298 grains.
Cubeb berries,
powdered ..... 4 ozs. 298 grains.
Acetate of potash 9 ozs. 158½ grains.
Oil of peppermint .....10 drops.
Liquor potassa.. 9 ozs. 158½ minims.
Dilute alcohol....64 ounces.
Simple syrup....32 ounces.
Burnt sugar coloring ..... 2 ounces.
Water q. s. to
make .....128 ounces.

Macerate the drugs with the dilute alcohol and liquor potassa for 3 days. Percolate, after the dilute alcohol has passed through the drugs. Run water through sufficient to obtain 30 ounces. Add the syrup and color and mix well.

Calisaya Cordial.

Quinine muriate.....284 grains.
Citric acid .....284 grains.
Aromatic elixir .....102 ounces.
Tincture of cudbear.....3½ ounces.
Burnt sugar coloring..... ½ ounce.
Simple syrup enough to
make .....128 ounces.

Dissolve the quinine muriate and the citric acid in the aromatic elixir. Add the coloring and enough simple syrup to make 128 ounces.

Cathartic Elixir Compound.

Senna leaves, whole.....20 ounces.
Jalap, rough ground..... 6 ounces.
Cascara, rough ground.... 4 ounces.
Fennel seed, rough ground 2 ounces.
Cloves, rough ground.... ½ ounce.
Licorice root, rough ground ..... 2 ounces.
Borax, powdered ..... 4 ounces.

Mix well. Put into a canton flannel bag and macerate in hot water for 3 hours. Press out in tincture press and evaporate to 7 pints (112 ounces). Dissolve in this

Rochelle salts ..... 8 ounces.
Sugar .....16 ounces.
Saccharine soluble..... 1 dram.
Salicylic acid ..... 1 dram.
Oil of anise..... 1 dram.
Oil of sassafras..... 1 dram.

Dissolved in

Alcohol ..... 2 ounces.

Add

Glycerine .....32 fl. ounces.

Chionanthia Compound.

Fl. Ext. chionanthia .....16 ounces.
Fl. Ext. mayapple ..... 4 ounces.
Fl. Ext. wahoo ..... 8 ounces.
Fl. Ext. berberis aquifolium. 8 ounces.
Saccharin solution..... 2 ounces.
Simple elixir .....64 ounces.
Sugar coloring ..... 2 ounces.
Simple syrup .....24 ounces.

Mix tne fluid extracts and add to the simple elixir. Add the simple syrup coloring and saccharin solution Mix well.

Chocolate Quinine.

Chocolate, finely powdered. 8 ounces.
Gelatine, sheet ..... 1 ounce.
Water ..... 8 ounces.
Glycerine ..... 1 ounce.
Vanillin crystals ..... 1 dram.
Saccharin soluble ..... 1 dram.
Benzoate of soda..... 1 ounce.
Quinine sulphate ....4 ozs. 298 grains.
Simple syrup, hot, to make .....128 ounces.

Put the gelatine in enough water to cover it and allow it to stand until it ceases to swell, say 12 hours. Then heat on a water bath until melted. Add the chocolate and mix well. As soon as the chocolate is well mixed add the hot syrup gradually to the mixture of chocolate and gelatine. Add the soluble saccharin and benzoate of soda. Triturate the vanillin with the glycerine and add.

Rub the sulphate of quinine with a portion of the mixture (when cold) to a smooth cream and add the remainder of the mixture (cold). Mix thoroughly and add burnt sugar coloring, 2 ounces, to improve the appearance of the goods.

Elixir of Celery Co.

Fl. Ext. celery ..... 8 ounces.
Fl. Ext. coca ..... 4 ounces.
Fl. Ext. kola ..... 8 ounces.
Fl. Ext. black haw..... 4 ounces.
Alcohol .....16 ounces.

Simple elixir enough to make 128 ounces. Mix.

Elixir of Chloral Co.

Chloral hydrate crystals .... 2 pounds 1360 grains.
Bromide of potash crystals. 2 pounds 1360 grains.
Fl. Ext. cannabis indica....144 minims.
Fl. Ext. hyoscyamus .....144 minims.
Saccharin soluble ..... 30 grains.
Water ..... 32 ounces.

Simple elixir enough to make 128 ounces.

Burnt sugar coloring, q. s.

Triturate the chloral hydrate crystals, bromide of potash crystals and the fluid extracts together in a large mortar and let stand for 12 hours. To this add a mixture of 32 ounces of water and 64 ounces of simple elixir. To dissolve the salts, add the coloring and dissolve the saccharin in the remainder of the elixir, sufficient to make the finished product measure 128 fl. ounces.

Complexion Cream.

White wax ..... 42 ounces.
White mineral oil.....106 ounces.
Water distilled ..... 50 ounces.
Borax, powdered ..... 2 ounces.

Dissolve the white wax in the oil by the aid of gentle heat. Mix the borax and water and bring to the boiling point. Pour into the warm mixture of wax and oil, stirring well. When cool perfume with

Oil of rose geranium.....1 dram.
Oil of rose..... 1 dram.
Terpineol .....2 drams.

Cream Liniment, Cheap.

Turpentine .....45 ounces.
Lard oil .....20 ounces.
Gum camphor ..... 2 ounces.
Oil of origanum..... 5 ounces.
Soft soap .....10 ounces
Aqua Ammonia, stronger... 8 ounces.
Water, q. s.

Dissolve the soap in 32 ounces of water. Dissolve the gum camphor in the turpentine and oil of origanum.

Place the soap solution in a large graniteware vessel and slowly add the mixture of oils and gum camphor with constant trituration until white and creamy. Shake the lard oil and aqua ammonia stronger, together in a well-corked bottle and add with constant trituration to the turpentine mixture. In 24 hours add slowly with constant stirring enough water to make the liniment of the proper consistence. This somewhat depends on the temperature. In the winter season more water is required than in hot weather.

Elixir Creosote and Heroin Co.

Beechwood creosote....1 oz. 75 grains.
Heroin Hydrochloride ...42 2-3 grains
Terpin hydrate .....2 ozs. 149 grains.
Eucalyptol .....256 minims.
Water .....16 ounces.
Alcohol .....64 ounces.
Borax ..... 1 ounce.
Glycerine, hot .....32 ounces.
Simple syrup, enough to make .....128 ounces.

Rub the creosote, eucalyptol and borax together in a mortar. Let stand for four hours, then triturate with a mixture of 30 ounces of alcohol and 15 ounces of water filter. Dissolve the heroin in an ounce of water. Dissolve the terpin hydrate in the hot glycerine and mix altogether, stirring constantly. Make up to 128 ounces with simple syrup.

Cresol Alkaline.

Soft green soap, alkaline.64 ounces av.
Cresol, technical .....64 ounces av.

Heat together until combined in a clear solution.

Croup Syrup.

Tinct. of aconite, 10 Gm. of aconite in 100 Cc. U. S. .....512 minims.
Fl. Ext. castanea ..... 8 ounces.
Fl. Ext. jaborandi ..... 8 ounces.
Calcium iodide .....512 grains.
Water ..... 4 ounces.
Syrup of tolu to make....128 ounces.

Mix the tincture and fluid extracts. Dissolve the calcium iodide in the water . Add to the syrup and mix all thoroughly.

Elixir of Digitalin Co.

Tincture of digitalis.....16 ounces.
Strychnine .....16 grains.
Spirits of nitro-glycerine... 2 ounces.
Fl. Ext. cactus grandiflora.. 2 ounces.
Water .....28 ounces.
Simple elixir, red.....80 ounces.
Mix.

Diarrhoea Cordial.

Alcohol .....40 ounces.
Gum camphor ..... ½ ounce.
Oil of peppermint..... ⅛ ounce.
Tinct. rhatany ..... 2 ounces.
Tinct. nutgalls ..... 4 ounces.
Tinct. opium ..... 4 ounces.
Fluid extract ginger..... 2 ounces.
Soda benzoate ..... ¾ ounce.
Potassium carbonate .... 1¼ ounces.
Extract of logwood..... 2 ounces.
Water .....80 ounces.
Sugar coloring ..... 1 ounce.
Simple syrup .....64 ounces.

Dissolve the gum camphor in the alcohol. Add the oil, tinctures and fluid extract. To this add the simple syrup. In half of the water dissolve the carbonate of potash and benzoate of soda and add. In the remainder of the water, hot, dissolve the extract of logwood and add last.

Eczema Lotion Without Mercury.

Iodine resublimed ..... ½ ounce.
Potassium Iodide.2 ounces 149 grains.
Glycerine ..... 8 ounces.
Water .....sufficient.
Carbolic acid crystals.... 1 ounce.
Oil of bitter almonds.... 1 dram.
Oil of citronella.....10 drops.
Hyposulphite of soda.... 5 ounces.

Dissolve the iodide of potassium in 8 ounces of water. Add the iodine. Dissolve the oils in the carbolic acid and add the glycerine. Mix together and add the hyposulphite of soda previously dissolved in 64 ounces of water. Make up with water to 128 ounces.

Eczema Lotion with Mercury.

Nitric acid C. P..... 3½ fl. ounces.
Hydrocyanic acid, dil. 4 fl. ounces.
Corrosive sublimate .. ¼ ounce av.
Carbolic acid ..... ½ ounce av.
Pyroligneous acid.... 24 ounces.
Glycerine ..... 24 fl. ounces.
Water q. s. to make..128 fl. ounces.

Add the nitric acid to 16 ounces of water. In this dissolve the corrosive sublimate and carbolic acid . Mix the other ingredients and add to the mixture the solution of corrosive sublimate and carbolic acid. A little red coloring improves the appearance. For external application only. Poison label. A very effective lotion for diseases of the skin.

Eczema Cream.

Resorcinol ..... 4 ounces.
Zinc oxide ..... 7 ounces.
Cresol alkaline ..... 6 ounces.
Acid salicylic ..... 1 ounce.
Iodized phenol ..... ¾ ounce.
Sulphur resublimed .....10 ounces.
Petrolatum, light amber..48 ounces.

Kaolin q. s. to make of the right consistence.

Iodized Phenol.

Carbolic acid crystals.....2 ounces.
Iodine resublimed .....1 ounce.

Dissolve the iodine in the carbolic acid.

Elixir of Five Bromides.

Potassium bromide.....20 ounces.
Ammonium bromide ..... 4 ounces.

Sodium bromide ..... 4 ounces.
Strontium bromide ..... 4 ounces.
Lithium bromide .....3 ozs. 48 grains.
Sodium benzoate ..11 ozs. 307½ grains.
Water .....64 ounces
Simple elixir .....sufficient.

Dissolve the bromides in the water and make up to 128 ounces with simple elixir, white.

Each teaspoonful contains 15 grains of the mixed bromides and 5 grains of sodium benzoate. The latter, according to the experience of Dr. B. K. Stumberg of St. Charles, Mo., allows of large doses of the bromides being taken with toleration and without the eruption of acne.

Elixir of Four Chlorides.

Mercuric chloride .....16 grains.
Arsenous acid solution (acid) ..... 5½ ounces
Tincture of iron chloride.12 ounces.
Diluted hydrochloric acid.12 ounces.
Simple syrup .....64 ounces.
Calisaya cordial q. s. to make .....128 ounces.

Dissolve the mercuric chloride in the diluted hydrochloric acid. Add the tincture of iron arsenous acid solution, simple syrup and calisaya cordial.

Wine of Gaduol.

Gaduol ..... ½ ounce.
Oil of bitter almonds..... 1 dram.
Alcohol .....32 ounces.
Hypophosphites of lime and soda ..... 2 ounces.
Sweet angelica wine.....64 ounces.
Port wine .....64 ounces.
Simple elixir .....16 ounces.
Color, q. s.

Dissolve the gaduol in the alcohol Add the oil of bitter almonds. Dissolve the hypophosphites in the water. Add to the wines and the other ingredients. Color if required. For wine of cod liver light (cordial) omit the port wine, replacing it with angelica or pale sherry.

Elixir of Gentian and Iron.

Tincture of citro chloride or iron .....4 ounces 298 minims
Fl. Ext. gentian..4 ounces 298 minims.
Solution of saccharin..... 16 ounces.
Simple elixir, red, to make.128 ounces.
Sugar coloring, q. s.

Elixir of Glycerophosphates.

Sodium glycerophosphate .....3 ozs. 127½ grains.
Calcium glycerophosphate .....1 oz. 74½ grains.
Phosphoric acid, 85 per cent .....456 grains.
Glycerine ..... 38 fl. ounces.
Aromatic elixir..... 38 ounces.
Distilled water to make.128 ounces.

Sugar coloring q. s. to make a straw color.

Dissolve the glycerophosphates and the phosphoric acid in 16 ounces of distilled water. Add the aromatic elixir and enough distilled water to make 128 ounces.

When a solution of glycerophosphates is ordered without sugar, replace the aromatic elixir with a mixture of alcohol 8 ounces and orange flower water 30 ounces.

Glycerole of Heroin, Comp.

Heroin hydrochloride..... 64 grains.
Ammonium chloride.....384 grains.
Water ..... 12 ounces.
White pine bark infusion. 1 ounce.
Tincture of henbane.....128 minims.
Simple syrup ..... 64 ounces.
Glycerine ..... 32 ounces.
Syrup of tolu..... 32 ounces.

Dissolve the heroin and ammonium chloride in the water. Add the tinc-

ture to the glycerine, the infusion to the syrups and mix all thoroughly. Color dark with burnt sugar coloring.

Glycerine Tonic Compound.

Tincture of dandelion	8 ounces.
Fl. Ext. of gentian	2 ounces.
Phosphoric acid	2 ounces.
Glycerine	48 fl. ounces.
Simple syrup	48 fl. ounces.
Burnt sugar coloring	2 fl. ounces.
Sherry wine	256 ounces.

Mix.

Guaiac and Creosote Tonic.

Guaiac sulphonate	2 ozs. 149 grains.
Creosote sulphonate	2 ozs. 149 grains.
Strychnine sulphate	8 grains.
Quinine sulphate	64 grains.
Manganese sulphate	64 grains.
Potassium hypophosphite	640 grains.
Citric acid	120 grains.
Water	16 ounces.
Simple syrup, hot q. s. to make	112 ounces.

Dissolve the citric acid, strychnine and the quinine in 4 ounces of water. Dissolve the manganese and potassium hypophosphite in 12 ounces of water. Dissolve the guaiac and creosote sulphonate in the hot syrup and mix with the other solutions.

Hepatic Stimulant.

Gum Aloes	32 ounces.
Water boiling	128 ounces.

Heat for four hours and strain.

Dandelion root, rough ground	24 ounces.
Water boiling	128 ounces.

Heat for four hours and strain.

Alcohol	4 ounces.
Saccharin	½ ounce.
Nitro muriatic acid dilute	32 ounces.
Simple elixir	128 ounces.

Mix the aloes and dandelion together. Make the combined product measure 96 ounces by adding water. Dissolve the saccharin in the alcohol. Add to the simple elixir and the dilute acids. Mix well. Let stand for 24 hours. Decant the clear portion and filter the residue. The finished product should measure 256 ounces.

This is a popular remedy in the lead belt for constipation caused by lead poisoning.

Hexa-Tropine.

Saw palmetto berries, ground	2¼ ounces.
Hydranges	10 ounces.
Oil of sandalwood	1 ounce.
Borax	2 ounces.
Hexamethylene	10 ounces.
Lithia benzoate	10 ounces.
Water, boiling	32 ounces.
Alcohol	32 ounces.
Simple syrup	32 ounces.
Water, hot	sufficient.

Mix the oil of sandalwood with 16 ounces of alcohol and pour over the saw palmetto berries and hydrangea. Dissolve the borax in 32 ounces of boiling water and add. Keep in a close covered vessel for 3 days. Percolate with a mixture of 16 ounces of alcohol and 20 ounces of water, and when the percolate has ceased dropping run hot water through the percolator until 128 ounces are obtained. In this dissolve the hexamethylene and the lithium benzoate. Add the 32 ounces of simple syrup and color (if desired to be darker) with burnt sugar color.

Hive Syrup and Eucalyptus Co.

Fl. Ext. squills	4 ounces.
Fl. Ext. senega	4 ounces.
Fl. Ext. lobelia	1 ounce.
Tartar emetic	128 grains.

Dissolved in

Water	4 ounces.
Eucalyptol	¼ ounce.

Dissolved in

Alcohol .....35 ounces.
Simple syrup ..... 80 ounces.
Color, light amber.

Hydrangea and Lithia.

Hydrangea, rough ground..16 ounces.
Valerian, rough ground..... 1 ounce.
Alcohol .....32 ounces.
Water .....32 ounces.
Macerate the drugs in the alcohol and water. After 3 days percolate and run enough water through the percolator to make the product measure 112 ounces. In this dissolve
Lithium salicylate..5 ozs. 372½ grains.
Lithium benzoate...5 ozs. 372½ grains.
Simple syrup .....31 ounces.
Burnt sugar coloring..... 1 ounce.
Add

Hydrastis Colorless.

Hydrastine, white alkaloid.64 grains.
Dissolved in
Water .....30 ounces.
Hydrochloric acid dilute.. 3 drams.
Boric acid .....½ ounce.
Glycerine, hot .....18 fl. ounces.
Burnt alum, powdered.. ½ ounce.
Water .....16 ounces.
Dissolve the hydrastine in a small portion of the water, to which has been added the hydrochloric acid. Then add the remainder of the 30 ounces of water. Dissolve the boric acid in the hot glycerine. Dissolve the burnt alum in the 16 ounces of water. Add together. Shake well. Let stand. When sediment has subsided decant the clear portion and filter the residue.

Syrup Hypophosphites, Cloudy.

Calcium hypophosphites .....4 ozs. 127½ grains.
Sodium hypophosphites....480 grains.
Iron phosphate soluble....120 grains.
Manganese phosphate soluble .....120 grains.
Quinine sulphate ..... 40 grains.
Strychnine sulphate ..... 1 grain.
Water distilled .....32 ounces.
Simple syrup q. s. to make.128 ounces.
Place the salts in an enameled kettle. Pour on boiling water to dissolve and mix with syrup.

Iodide of Sulphur Ointment.

Iodide of sulphur.....640 grains.
Glycerine .....640 grains.
Petrolatum, yellow.2 pounds 720 grains.
Rub the iodide of sulphur with the glycerine to a smooth paste. Add the petrolatum. Mix thoroughly.

Solution of Iron Manganese and Pepsin.

Scale pepsin 1 to 3000..256 grains.
Hydrochloric acid ..... ½ dram.
Citrate of iron, soluble.. ¼ ounce.
Citrate of iron and manganese ..... 1½ ounces.
Sherry wine ..... 8 ounces.
Alcohol ..... 15 ounces.
Vanillin ..... 15 grains.
Water .....105 ounces.
Saccharin ..... 2 grains.
Burnt sugar coloring.... ¾ ounce.
Dissolve the pepsin in 8 ounces of the water, to which the hydrochloric acid has been previously added. Dissolve the vanillin and saccharin in the alcohol. Add the remainder of the water in which has been dissolved the iron salts.
Mix all the ingredients thoroughly.

Solution of Iron, Manganese, Pepsin and Arsenic.

Same as above, with the addition of solution of arsenic (acid), 1 ounce.

Elixir Iron Quinine and Strychnine.

Tincture of citro chloride of iron .....8 ounces.
Quinine muriate ....1 oz. 74½ grains.

Strychnine sulphate .. 16 grains.
Saccharin .....120 grains.
Alcohol ..... 4 ounces.
Simple elixir enough
to make .....128 ounces.

Dissolve the saccharin and strychnine in the alcohol. The quinine in the elixir and add the iron. Each fluid dram represents about ½ grain of ferric chloride, ½ grain of quinine muriate and 1-64 grain of strychnine sulphate. This makes a nice preparation and is of good color and flavor.

Ointment for Severe Burns.

Icthyol ..... 1 ounce.
Thymol ..... 1 ounce
Lanolin anhydrous ..... 4 ounces.
Cocoa butter ..... 4 ounces.

Elixir Lactated Pepsin.

Pepsin, scale 1-3000.....512 grains.
Lactic acid .....180 minims.
Hydrochloric acid .....360 minims.
Water ..... 32 ounces.
Sherry wine ..... 32 ounces.
Simple elixir ..... 64 ounces.

Add the hydrochloric acid, lactic acid and pepsin to the water. Let digest with occasional shaking for a week. Filter and to this add the other ingredients and color with a red color, darkened with sugar coloring. Always have your wines, elixir, alcohol and other materials bright and clear by fining or by subsidence. Much money and time is wasted in filtering.

Compound Pepsin Powder.

Sugar of milk.....16 ounces.
Pepsin, powdered 1to 3000 3 ounces.
Horlick's malted milk.... 8 ounces.
Diastase ..... ¼ ounce.
Lactic acid ..... ¼ ounce.
Hydrochloric acid ..... ⅛ ounce.

Mix the powders and drop the acids on the mixture. Let dry by a gentle heat and sift well together.

Digestive Essence of Pepsin 2 Grains.

Pepsin, scale 1-3000..4 ozs. 298 grains.
Acid nitro muriatic
dilute .....10 ozs. 235 minims.
Angelica or sherry
wine, dry, to make 128 ounces.

To 48 ounces of the wine add the pepsin and the nitro muriatic acid dilute. Let it remain for a week with occasional shaking. Filter and add the remainder of the wine..

Dose: 1 to 2 teaspoonfuls. This is an excellent preparation, containing 2 grains of pepsin and about 5 minims of nitro muriatic acid dilute to the teaspoonful.

Glycerole of Pepsin.

Scale pepsin
1-3.000 .....11 ozs. 307½ grains.
Glycerine ..... 64 fl. ounces.
Water ..... 64 fl. ounces.
Hydrochloric acid
u. s. p. .....600 minims.
Kaolin ..... 2 ounces.

Place the pepsin in 48 ounces of the water, to which has been added the hydrochloric acid. Let macerate, with occasional shaking, for 7 days. Add the remainder of the water and the kaolin. Shake well. Let stand until clear. Decant the clear portion. Filter the remainder. Add the glycerine and make up to 64 ounces with water.

Phosphate of Soda Solution.

Phosphate of soda crystals ..... 6 pounds.
Citric acid ..... 1½ pounds.
Nitrate of potash..... 64 grains.
Water to make.....128 ounces.

Dissolve the salts in the water, triturating in a mortar.

Saccharin Solution.

Saccharin (insoluble so-called) ..... 4 ounces.
Sodium bicarb ..... 2 ounces.
Water to make.....128 ounces.

Phosphorox Tonic.

Quinine sulphate ..... 32 grains.
Cinchonidine sulphate ... 16 grains.
Cinchonine sulphate ..... 16 grains.
Arsenous acid solution....256 minims.
Phosphoric acid 85 per ct.256 minims.
Mercuric chloride..... ½ grain.
Potassium hypophosphite..256 grains.
Alcohol ..... 8 ounces.
Water ..... 8 ounces..
Port wine, California,
Simple elixir, red,
equal parts to make....128 ounces.

Dissolve the cinchona salts and phosphoric acid in the water, the mercuric chloride in the alcohol. Mix and add enough of port wine and simple elixir equal parts to make 128 ounces.

Elixir of Poppy Compound.

Syrup of poppy..... 2 ounces.
Morphine sulphate .....126 grains.
Simple elixir ..... 94 ounces.
Water .....16 ounces.
Port wine .....16 ounces.

Psoriasis Salve.

Acid salicylic ..... 2 drams.
Chrysarobin ..... 4 drams.
Oil of cade.....10 drams.
Soft soap ..... 4 ounces.
Yellow petrolatum ..... 4 ounces.

Mix with the aid of a gentle heat.

Sal Santol.

Oil of sandalwood, East
Indian .....16 fl. ounces.
Oil of copaiba, finest....16 fl. ounces.
Salol .....16 ounces.
Saccharine .....½ ounce.
Acetone or alcohol..... 8 ounces.
Oil of peppermint.....½ ounce.
Castor oil, brilliant.....112 ounces.

Dissolve the saccharine and oil of peppermint in the acetone.

Dissolve the salol in the oils of copaiba and sandalwood, without heating. Add the saccharin and peppermint solution to the castor oil. Mix well and add the oils and salol.

Each teaspoonful contains approximately 6 2-3 grains each of oil of sandalwood, oil of copaiba and salol in a palatable form. When alcohol is used in the above preparation the percentage must be declared on the label. When acetone is used this is not necessary. There is no preparation on the market quite as effective as this is for gonorrhoea. To add to its effectiveness an alkaline mixture should be given to the patient in the early stage of the disease. The dose is 1 teaspoonful 4 times a day.

Soluble Lemon for Bottlers.

Magnesia carbonate, light.. 1 ounce.
Granulated sugar ..... 1 ounce.
Oil of lemon.....½ ounce.
Alcohol ..... 8 ounces.
Water ..... 8 ounces.

Mix the magnesia, sugar and oil in a mortar. Make into a paste with 2 ounces of the alcohol. Mix the remainder of the alcohol with the 8 ounces of water and add gradually with constant stirring and filter. Return the first portion that passes through the filter until the liquid comes through perfectly clear. A small portion of fresh lemon or orange peel macerated in the mortar improves the bouquet. Color may be added to suit.

Soluble Orange for Bottlers.

Magnesia carbonate, light.. 1 ounce.
Granulated sugar ..... 1 ounce.
Oil of orange, sweet.....½ ounce.
Alcohol ..... 8 ounces.
Water ..... 8 ounces.

Directions for compounding this same as for soluble lemon for bottlers.

Elixir of Salicylic Acid Comp. No. 1.

Salicylic acid.....11 ozs. 307½ grains.
Soda bicarbonate..12 ounces.
Potassium iodide.512 grains.
Fl. Ext. black cohosh ..... 2 ounces.
Fl. Ext. Gelsemium. 2 ounces.
Alcohol ..... 8 ounces.
Simple elixir q. s. to make.....128 ounces.

Triturate the salicylic acid and soda bicarbonate with 64 ounces of the water. Let stand for 4 hours. Add the potassium iodide and dissolve. Mix the simple elixir alcohol and fluid extracts and add sugar coloring, 2 ounces.

Elixir Salicylic Acid Comp. No. 2.

Salicylic acid.....11 ozs. 312½ grains.
Soda bicarb. .....12 ounces.
Potassium iodide.. 1 oz. 74½ grains.
Fluid extract black cohosh ..... 8 ounces.
Fluid extract gelsemium ..... 4 ounces.
Sugar coloring q. s.

Elixir Saw Palmetto and Sandal Co. No. 1.

Saw palmetto berries, rough ground .....20 ounces.
Corn silk ..... 4 ounces.
Oil of sandalwood E. I..... 1 ounce.
Borax, powdered ..... 2 ounces.
Water, boiling .....32 ounces.
Celery seed, ground..... 1 ounce.
Fenugreek seed, ground.... 1 ounce.
Sodium benzoate ..... 4 ounces.
Simple syrup .....32 ounces
Alcohol q. s.

Mix the oil of sandalwood with 8 ounces of alcohol and pour over the saw palmetto berries, seeds and corn silk. Let stand for 24 hours. Dissolve the borax and benzoate of soda in the 32 ounces of boiling water and add to the drugs. Place in a percolator and percolate with a mixture of 1 part of alcohol and 2 parts of water until 80 ounces are obtained. Run boiling water through the percolator until 16 ounces more are obtained. Mix with the former and filter. Make up to 128 ounces by adding the simple syrup.

Elixir Saw Palmetto and Sandal Co. No. 2.

Fl. Ext. of saw palmetto.... 8 ounces.
Fl. Ext. of corn silk ..... 4 ounces.
Fl. Ext. of sandalwood..... 4 ounces.
Bicarbonate of potash.6 ozs. 35 grains.
Benzoate of soda.....6 ozs. 35 grains.
Water .....16 ounces.
Simple elixir enough to make .....128 ounces.

Dissolve the bicarbonate of potash and the benzoate of soda in the water and add to the simple elixir and fluid extracts.

Soap Perfume.

Oil of bergamot	2	ounces.
Oil of petitgrain	2	ounces.
Oil of sweet orange	2	ounces
Oil of lavender	1½	ounces.
Oil of lemongrass	1	dram.
Oil of patchouli	1	dram.
Oil of sandalwood	2	drams.
Artificial musk	8	ounces.

Wine of Tamarack Bark.

Hypophosphite of lime..341 1-3 grains.
Hypophosphite of soda..341 1-3 grains.
Hypophosphite of potash.341 1-3 grains.
Iodide of potash.....2 ozs. 149 grains.
Bromide of potash....2 ozs. 149 grains.
Port wine, California.....48 ounces.
Alcohol .....12 ounces.
Simple syrup ..... 6½ ounces.
Water .....48 ounces.
Burnt sugar coloring..... 1½ ounces.
Infusion of tamarack bark.12 ounces.

Dissolve the salts in the water. Add the alcohol, mixed with the wine, the syrup coloring and infusion of tamarack.

The above is an excellent preparation for chronic coughs.

Infusion of Tamarack Bark.

Tamarack bark.....16 ounces.
Boiling water.....64 ounces.

Infuse, when cold filter and make up to 64 ounces with glycerine.

Elixir Terpin Hydrate Compound.

Terpin hydrate.....1024 grains.
Codeine ..... 128 grains.
Alcohol ..... 52 ounces.
Glycerine, hot ..... 52 ounces.
Simple syrup ..... 16 ounces.
Simple elixir ..... 8 ounces.

Dissolve the terpin hydrate in the hot glycerine, the codeine in the simple elixir. Add alcohol and simple syrup. Mix well and color a straw color with burnt sugar coloring q. s.

Terramenthaline.

Kaolin .....54 ounces.
Glycerine .....32 fl. ounces.
Water .....16 fl. ounces.
Boric acid ..... 1½ ounces.
Menthol .....15 grains.
Salicylic acid .....80 grains.
Oil of peppermint..... 5 drops.
Oil of wintergreen.....30 drops.
Oil of eucalyptol.....30 drops.
Water .....sufficient.

Dissolve the acids and menthol in 8 ounces of the glycerine by the aid of heat. Mix this with the oils, the remainder of the glycerine and 16 ounces of water, and with it make the kaolin into a paste. Add water sufficient to bring to a proper consistency.

Universal Ointment.

Calomel .....¾ ounce.
Zinc oxide .....¾ ounce.
Acetanilid, powdered .....½ ounce.
Boric acid, powdered.....½ ounce.
Oil of wintergreen.....10 drops.

Mix the powders well and add to a base of

White petrolatum ..... 6 ounces.
Salol ..... 1 ounce.
White wax ..... 1 ounce.

Melt the wax in the white petrolatum by the aid of a gentle heat. When nearly cool add the salol and stir until the salol is dissolved. Then add the powders and mix thoroughly. This is the best salve that can be made for general utility.

For piles to each ounce add 30 grains of tannin.

For pruritus ani to each ounce add 60 grains of quinine sulphate.

For weeping eczema to each ounce add 15 grains salicylic acid.

Uterine Tonic.

Squaw vine, powdered..... 6 ounces.
Golden Seal, powdered..... 2 ounces.
Jamaica dogwood, powdered 6 ounces.
Black haw, powdered..... 8 ounces.
Black cohosh, powdered.... 6 ounces.
Hyosciamus, powdered..... 2 ounces.
Cannabis Indica, powd'd...¼ ounce.
Cassia, powdered ..... 2 ounces.
Alcohol .....sufficient.
Water .....sufficient.
Benzoate of soda..... 2 ounces.
Bromide of potash..... 8 ounces.
Fl. Ext. cascara aromatic...32 ounces.
Saccharine solution..... 4 ounces.

Macerate and percolate the drugs with a mixture of alcohol, 32 ounces, water, 64 ounces. Dissolve the benzoate of soda and bromide of potash in 16 ounces of water and add to the percolate obtained. To this mixture add the 32 ounces of Fl. extract of cascara aromatic and the solution of saccharin and run enough water through the percolator to make the product measure 128 ounces.

Hall's Infant Colic Mixture.

Tincture of assafoetida..15 drops.
Tincture of cinnamon.... ½ ounce.
Soda carbonate ..... 1 grain.
Aromatic syrup of rhubarb ..... 3 drams.
Water ..... 1½ ounces.
Mix.
Dose: One teaspoonful.

Children's Cough Syrup.

Ammonia muriate .....32 grains.
Potash chlorate ..... 1 scruple.
Tincture of aconite.....15 drops.
Syrup of Dover's powder. 2½ drams.
Syrup of tolu q. s. to make up to..... 2 ounces.
Mix.
Dose: One teaspoonful every 3 hours.

Dysentery Cure.

Claret wine, good quality... 1 bottle.
Rhubarb, ground .....½ ounce.
Cassia bark, ground.....½ ounce.
Alspice, ground .....½ ounce.
Boil down to three-fourths; strain.
Adult dose: One wineglassful 3 times a day.

Godfrey's Cordial.

Salts of tartar..... 2½ ounces.
Water .....26 pints.
Molasses (sugar house).. 2 gallons.
Oil of sassafras..... ½ ounce.
Alcohol, 188 per cent.... 2 pints.
Laudanum ..... 1½ pints.
Mix the oil with the alcohol, dissolve the salts of tartar in the water and add all the ingredients to the molasses. Mix well.

Godfrey's Cordial (without Opium.)

Sodii brom. ..... 1 dram.
Sodii carb. ..... 1 dram.
Ol. Sassafras ..... 4 minims.
Ol. anisi ..... 3 minims.
Spt. chloroformi ..... 2 drams.
Spt. rectificat .....½ ounce.
Tr. hyoscyam .....½ ounce.
Molasses .....½ pound.
Aq. ad .....16 ounces.
Dissolve the oils in the spirits, and add the tincture. Dissolve the soda salts in the water, and mix with the treacle. To this add the spirit mixture, shake well, and after four days decant the clear portion.

Godfrey's Cordial.

There are various formulae for this preparation. Paris says the following was obtained from a wholesale druggist, who makes and sells many hundred dozen bottles a year:
Infuse
Sassafras ..... 9 ounces.
Caraway ..... 1 ounce.
Coriander ..... 1 ounce.
Aniseed ..... 1 ounce.
Water ..... 6 pints.
Simmer till the liquid is reduced to 4 pints, add
Treacle ..... 6 pounds.
And boil the whole for a few minutes; when cold add
Tincture of opium..... 3 ounces.

Bateman's Drops.

Tincture of opium.....320 minims.
Tincture of catechu co....240 minims.
Spirit of camphor.....300 minims.
Oil of anise..... 8 minims.
Caramel .....120 minims.
Diluted alcohol q. s. to make ..... 16 fl. ounces.
Mix.
Each fluid dram contains 2½ minims of tincture of opium.

Paregoric.

Alcohol, 188 per cent..... 1 gallon.
Oil of anise..... 1 ounce.
Gum camphor .....¾ ounce.
Benzoic acid ..... 1 ounce.

Water ..... 1 gallon.
Laudanum ..... 1 pint.
Caramel and red sanders, q. s.

To Prepare Decoctions.

For making decoctions the substances, if dry, should be well bruised, or reduced to a very coarse powder, or, if fresh and soft, they should be sliced small. In the former case, any very fine powder or adhering dust should be removed with a sieve, as its presence would tend to make the product thick and disagreeable, and also more troublesome to strain. The vessel in which the boiling is conducted should be closely covered, the better to exclude the air and the heat should be so regulated that the fluid may be kept simmering, or only gently boiling, as violent boiling is both unnecessary and injurious. In every case the liquor should be strained while hot, but not boiling; and the best method of doing this is to employ a fine hair sieve or a coarse flannel bag. In preparing compound decoctions, those ingredients should be boiled first which impart their active principles least readily, and those which most readily impart them should be added afterward. In many cases it will be proper simply to infuse the more aromatic substances in the hot decoctions of the other ingredients, by which means their volatile principles will be preserved. When the active principles of the principal ingredients are volatile, infusion should be had recourse to, instead of boiling.

Strength of.—Decoctions of substances not exerting a very powerful influence on the system may be made, as a general rule, by boiling an ounce, if dry, or a handful, if green, in a pint of water for ten or fifteen minutes.

Dose of.—The ordinary dose of decoctions thus prepared is a half to a wineglassful three or four times daily, or more frequently.

Specific Gravity.

To Convert Degrees Baume into Specific Gravity.—1. For liquids heavier than water.—Subtract the degree of Baume from 145, and divide into 145. The quotient is the specific gravity.

2. For liquids lighter than water.—Add the degree of Baume to 130, and divide it into 140. The quotient is the specific gravity.

To Convert Specific Gravity into Degrees (Baume).—1. For liquids heavier than water.—Divide the specific gravity into 145, and subtract from 145. The remainder is the degree of Baume.

2. For liquids lighter than water.—Divide the specific gravity into 140, and subtract 130 from the quotient. The remainder will be the degree of Baume.

Comparison of Degrees Twaddell and specific Gravity.—In order to change degrees Twaddell into specific gravity, multiply by 5, add 1,000, and divide by 1,000.

Example.—Change 168 degrees Twaddell into specific gravity.

168 × 5

840
1,000

1,000) 1,840

1.84, specific gravity.

To change specific gravity into degrees Twaddell, multiply by 1,000, subtract 1,000, and divide by 5.

Example.—Change 1.84 specific gravity to degrees Twaddell.

1.84 × 1,000

1,840
1,000

5) 840

168° Tw.

Cold Liquid Glue.

To make glue liquid in the cold nitric acid is generally added.

Glue	8	parts.
Water	8	parts.
Nitric acid	2½	parts.

The nitric acid may be replaced by acetic acid. Thus an excellent liquid gum is made by dissolving one part of glue in two parts of vinegar.

Another process consists in dissolving by the aid of heat:

Glue	30	parts.
Water	80	parts.

and immediately adding,

Hydrochloric acid	5	parts.
Zinc sulphate	7	parts.

A very strong liquid glue is obtained by the action of caustic soda upon glue. The following proportions are used:

Glue	1000	parts.
Water	1500	parts.
Commercial caustic soda..	40	parts.

Cement for Mending Rubber Shoes and Tires.

Western Druggist.

Caoutchouc in shavings	10
Resin	4
Gum turpentine	40
Oil turpentine	enough.

Melt together, first, the caoutchouc and resin, then add the gum turpentine, and when all is liquefied, add enough of oil of turpentine to preserve it liquid. A second solution is prepared by dissolving together:

Caoutchouc	10
Chloroform	280

For use these two solutions are mixed. First wash the hole in the rubber shoe over with the cement, then a piece of linen dipped in it is placed over it; as soon as the linen adheres to the sole, the cement is then applied as thickly as required.

COLORED FIRES.

Red Fire.

Strontia nit.	10	ounces.
Sulphur	3½	ounces.
Chlor. pot.	2	ounces.
Ant. sulph.	6	drams.
Veg. black	10	drams.

Mix.

Crimson Fire.

Chlorate potash	1	dram.
Sulphur	4	drams.
Willow charcoal	1	dram.
Nitrate of strontia	1½	ounces.

Mix.

Red Fire for Parades. Cheap.

Strontium nitrate	4
Potassium chlorate	1
Linseed meal	1

The proportion of linseed meal may be increased or decreased. This makes a slow-burning mixture. Green and blue fires cannot be produced in this manner.

Green Fire.

Potassium chlorate	18
Barium nitrate	60
Sulphur	22

To get a mixture which will burn more quickly reduce the proportion of barium nitrate and increase that of potassium chlorate. For a slower burning fire adopt a reverse process.

Red Fire.

Potassium chlorate	18
Strontium nitrate	60
Sulphur	21
Carbon	1

For quicker or slower burning fires proceed as above, reading barium for strontium.

Violet Fire.

Potassium chlorate 51
Calcium carbonate 18
Malachite powdered 16
Sulphur 15

By increasing the calcium salt and reducing the malachite a slower burning flame is obtained, and vice versa.

White Fire.

Nitrate of potassa..... 18 parts.
Sulphur ..... 10 parts.
Black sulphide of antimony. 3 parts.
Powdered quicklime ..... 4 parts.

The lime must not be slaked, but fresh and caustic.

Red Fire.

Nitrate of strontia .....13 parts.
Sulphur ..... 1 part.
Powdered gunpowder ..... 1 part.

Blue Fire.

Nitrate of potassa..... 5 parts.
Sulphur ..... 2 parts.
Metallic antimony ..... 1 part.

Green Fire.

Nitrate of baryta..... 60 parts
Chlorate of potassa..... 18 parts.
Sulphur ..... 22 parts.

Lilac Fire.

Chlorate of potassa..... 49 parts.
Sulphur ..... 25 parts.
Dry Chalk ..... 20 parts.
Black oxide of copper..... 6 parts.

Yellow Fire.

Sulphur ..... 6 parts.
Chlorate of potassa.....12 parts.
Bicarbonate of soda..... 3 parts.
Sulphate of strontia ..... 3 parts

Dark Blue Fire.

Sulphur ..... 6 ounces.
Copper sulphate ..... 1¼ ounces.
Potassium chlorate .....17 ounces.

Light Blue Fire.

Sulphur ..... 4 ounces.
Burnt alum ..... 6 ounces.
Potassium chlorate .....15 ounces.

Caution.

Caution.—Competent druggists need no directions for properly mixing the chemicals of a colored fire, but as the compounding of fire-works is oftentimes the great ambition of beginners, a word of advice will not be amiss in regard to the dangers of the manipulation, and the way to avoid them. Each substance must be dried and powdered separately, and afterwards mixed together in small quantities with a card or a wooden spatula on a piece of paper. Sifting with a hair sieve is a good way also, but the use of a mortar and pestle is extremely dangerous.

Infants' Food.

Baked wheaten flour..... 1 pound.
Soda bicarb. .....30 grains.
Sugar of milk .....½ ounce.
Mix.

Hektograph Copying Pad.

Best glue .....½ pound.
Clear soft water.....12 ounces.
Granulated sugar ..... 4 ounces.
Glycerin .....16 fl. ounces.
Powd. precptd. chalk or
oxide of zinc. ..... 2 ounces.
Soap, white castile.....¼ ounce.

Dissolve the glue, sugar and soap in the water by the aid of water bath heat; when dissolved add the glycer-

ine; when nearly cold stir in the oxide of zinc or the chalk, and pour into tins of the size desired. The tins should have a depth of at least ⅞ of an inch.

Hektograph Copying Ink.

Purple aniline 3. B..... 1 ounce.
Alcohol, 188 per cent..... 1 ounce.
Glycerine ..... 1 ounce.
Glucose ..... 1 ounce.
Water, hot ..... 7 ounces.

Dissolve the aniline in the alcohol add the glycerin, glucose and hot water.

Black Marking Ink for Linen.

Nitrate of silver crystals.. 1 ounce.
Distilled water .....10 ounces.
Acacia mucilage ..... 4 ounces
Nigrosine, black .....30 grains.
Aqua ammonia ..... q. s.

Dissolve the silver in the water and add ammonia water until the precipitate first formed is dissolved (shake the solution after each portion of the ammonia water is added); then add the nigrosine and lastly the mucilage. Write on the linen (tightly stretched) with a gold pen, and pass a hot iron over the writing. A quill pen or a new steel pen may be used in place of a gold pen.

CLEANSING, RENOVATING AND PROTECTING.

Sci. Amer. Cyclo.

To Remove Acid Stains. A

Chloroform will restore the color of garments, where the same has been destroyed by acids.

To Remove Acid Stains. B

When acid has accidentally or otherwise destroyed or changed the color of the fabric, ammonia should be applied to neutralize the acid. A subsequent application of chloroform restores the original color.

To Remove Acid Stains. C

Spots produced by hydrochloric or sulphuric acid can be removed by the application of concentrated ammonia, while spots from nitric acid can scarcely be obliterated.

Acids, Vinegar, Sour Wine, Must, Sour Fruits.

White goods, simple washing, followed up by chlorine water if a fruit color accompanies the acid. Colored cottons, woolens, and silks are very carefully moistened with dilute ammonia, with the finger end. In case of delicate colors, it will be found preferable to make some prepared chalk into thin paste, with water, and apply it to the spots.)

To Clean Alabaster.

The best method of cleaning these ornaments is to immerse them for some time in milk of lime, and then wash in clean water, and when dry dust them with a little French chalk. Milk of lime is made by mixing a little slaked lime in water. This has a "milky" appearance, whence its name Benzol or pure oil of turpentine is very highly recommended.

To Clean Alabaster. B

Use soap and water, with a little washing soda or ammonia, if necessary. Rinse it thoroughly.

Alkali Stains.

To remove from garments. A mixture of acetic acid, dilute with a large

quantity of water, will remove stains brought by soda, soap, boilers, lye, etc., if the solution is readily applied.

To Remove Stains of Aniline from the Hands.

Wash with strong alcohol, or what is more effectual, wash with a little bleaching powder, then with alcohol.

To Clean Stuffed Animals.

Give the animal a good brushing with a stiff clothes brush. After this warm a quantity of new bran in a pan, taking care it does not burn, to prevent which, quickly stir it. When warm, rub it well into the fur with your hand. Repeat this a few times, then rid the fur of the bran, and give it another sharp brushing until free from dust.

Scouring Balls. A

Curd soap ..... 8 ounces.
Oil of turpentine..... 1 ounce.
Oxgall ..... 1 ounce.

Melt the soap, and when cooled a little, stir in the rest, and make it into cakes while warm.

Scouring Balls. B

Soft soap ..... 1 pound.
Fuller's earth ..... 1 pound.

Beat them well together in a mortar, and form into cakes. To remove grease, etc., from cloth. The spot first moistened with water is rubbed with the cake, and allowed to dry, when it is well rubbed with a little warm water, and afterward rinsed or rubbed off clean.

To Clean Barometer Tubes.

Try a small quantity of warm nitric acid. Then rinse with water, rinse with absolute alcohol, and finally with ether; warm to expel the vapor of ether.

To Cleanse Barrels.

Put a few pounds unslaked lime in the barrel, add water, and cover. In a short time add more water and roll the barrel. Rinse with clean water.

To Remove Grease from Blackboards.

Make a strong lye of pearlashes and soft water, and add as much unslaked lime as it will take up. Stir it together and let it settle a few minutes, bottle it and stopper close. Have ready some water to dilute it when used, and scour the part with it. The liquor must not remain long on the board, as it will draw the color with it. Hence use it with care and expedition.

To Cleanse Blankets. A

Put two large tablespoonsfuls of borax and a pint bowl of soft soap into a tub of cold water. When dissolved put in a pair of blankets, and let them remain over night. Next day rub and drain them out, and rinse thoroughly in two waters, and hang them up to dry. Do not wring them.

To Cleanse Blankets. B

Scrape 1 pound of soda soap, and boil it down in sufficient water, so that when cooling you can beat it with the hand to make a sort of jelly. Add 3 tablespoonfuls spirit of turpentine and 1 tablespoonful of spirit of harts horn, and with this wash the article well and rinse in cold water until all the soap is taken off Then apply salt and water and fold between two sheets, taking care not to allow two

folds of the article washed to lie together. Smooth with a cool iron. Only use the salt where there are delicate colors that may run. If you can get potash soap, it will be better, as woolen manufacturers do not use soda soap.

To Remove Blood Stains. A

An accidental prick of the finger frequently spoils the appearance of work, and if for sale, decreases its value. Stains may be entirely obliterated from almost any substance by laying a thick coating of common starch over the place. The starch is to be mixed as if for the laundry, and laid on quite wet.

To Remove Blood Stains. B

The free and early application of a weak solution of soda or potash, and the subsequent application of the solution of alum, is recommended.

Blood and Albuminoid Matters.

Steeping in lukewarm water. If pepsine, or the juice of carica papaya, can be procured, the spots are first softened with lukewarm water, and then either of these substances is applied.

To Clean and Prepare Bones and Ivory.

The curators of the anatomical museum of the Jardin des Plantes have found that spirits of turpentine is very efficacious in removing the disagreeable odor and fatty emanations of bones or ivory, while it leaves them beautifully bleached. The articles should be exposed in the fluid for three or four days in the sun, or a little longer if in the shade. They should rest upon strips of zinc, so as to be a fraction of an inch above the bottom of the glass vessel employed the turpentine acts as an oxidizing agent, and the product of the combustion is an acid liquor which sinks to the bottom, and strongly attacks the ivory if allowed to touch it.

Make a thick paste of common whiting in a saucer. Brush well with a toothbrush into the carved work. Brush well out with plenty of clean water. Dry gently near the fire. Finish with a clean dry hard brush, adding one or two drops (not more) of alcohol.

Mix about a tablespoonful of oxalic acid in ½ pint of boiling water. Wet the ivory over first with water, then with a toothbrush apply the acid, doing one side at a time and rinsing, finally drying it in a cloth before the fire, but not too close.

Take a piece of fresh lime, slake it by sprinkling it with water, then mix into a paste, which apply by means of a soft brush, brushing well into the interstices of the carving; next set by in a warm place till perfectly dry, after which take another soft brush and remove the lime. Should it still remain discolored, repeat the process, but be careful to make it neither too wet nor too hot in drying off, or probably the article might come to pieces, being most likely glued or cemented together. If it would stand steeping in lime water for twenty-four hours, and afterward boiling in strong alum water for about an hour and then dried, it would turn out white and clean. Rubbing with oxide of tin (putty powder) and a chamois leather will restore a fine gloss afterward.

Clean well with spirits of wine, then mix some whiting with a little of the spirits, to form a paste, and well brush with it. It is best to use a rubber of soft leather where there are no

delicate points; put a little soap on the leather, and dip into the paste and rub the ivory until you get a brilliant polish, finish off with a little dry whiting; the leather should be atta hed to a flat wood surface and rub briskly.

When ivory ornaments get yellow or dusky looking, wash them well in soap and water, with a small brush to clean the carvings, and place them while wet in full sunshine; wet them two or three times a day for several days with soapy water, still keeping them in the sun; then wash them again, and they will be beautifully white. To bleach ivory, immerse it for a short time in water containing a little sulphurous acid, chloride of lime or chlorine.

Soda ash ..... 1 pound.
Lime (burned) .....½ pound.
Hot water ..... 3 quarts.

Mix and soak the bones for twenty-four hours in the liquid; wash them thoroughly and bleach them.

Put the bones in a strong warm alcoholic solution of caustic potash for a short time, then immerse in running water.

To Clean Straw.

Wash in warm soap liquor, well brushing them both inside and out, then rinse in cold water, and they are ready for bleaching.

To Bleach Straw.

To bleach.—Put a shall quantity of salts of sorrel or oxalic acid into a clean pan, and pour on it sufficient water to cover the bonnet or hat. Put the bonnet or hat into this liquor, and let it remain in it for about five minutes; to keep it covered hold it down with a clean stick. Dry in the sun or before a clear fire. Or, having first dried the bonnet or hat, put it, together with a saucer of burning sulphur, into a box with a tight-closing lid. Cover it over to keep in the fumes, and let it remain for a few hours. The disadvantage of bleaching with sulphur is that the articles so bleached soon become yellow, which does not happen to them when they are bleached by oxalic acid.

To Finish or Stiffen Straw.

To Finish or Stiffen.—After cleaning and bleaching, white bonnets should be stiffened with parchment size. Black or colored bonnets are finished with a size made from the best glue. Straw or chip plaits, or leghorn hats and bonnets, may also be cleaned, bleached and finished as above.

Removal of Stains from and Cleaning Books.

Dust can be removed by using bread or very soft rubber.

Water stains are removed by boiling water and alum. It will be necessary to float the sheet on this bath for some hours. Dry between clean blotting paper. The amount of alum is immaterial.

Damp stains are treated the same way, but with less chance of success.

Mud.

Mud.—Very little can be done. Wash in cold water, then in dilute hydrochloric acid and afterwards in a weak solution of chloride of lime. Rinse and dry.

Fox Marks.

Fox Marks.—Use very dilute hydrochloric acid or Javelle water.

Finger Marks.

Finger Marks.—Very difficult to erase. Apply a jelly of white or curd soap, then wash with a brush in cold water.

Blood Stains.

Blood Stains.—Soak in cold water, wash with soap and rinse.

Writing Ink Stains.

Ink stains (of writing ink) usually try oxalic acid followed by chloride of lime. Wash well.

Marking Ink Stains, Etc.

Ink Stains (Marking Ink, etc.)—Apply tincture of iodine. The silver in the ink forms silver iodide, which is removed by weak solution of potassium cyanide (deadly poison).

Grease Spots.

Grease Spots.—Put over the spot a piece of blotting paper, apply a hot iron.

Or, apply Fr. chalk, put a piece of paper over it and apply the iron.

Or, try ether or benzine, put blotting paper above and below the spot.

To Clean Ink Bottles.

For cleaning ink bottles, the best and quickest agent is oxalic acid, but it is a violent poison. Try shaking small nails, with water or vinegar in them, and if this does not answer, use hydrochloric acid, carefully washing out two or three times after its application.

To Clean Oily or Greasy Bottles.

Pour into them a little strong sulphuric acid; after they have been allowed to drain as much as possible, the bottle is then corked, and the acid caused to flow into every portion of it, for about five minutes. It is then washed with repeated rinsings of cold water. All traces of oil or grease left will be removed in a very expeditious manner, and no odor whatever will be left in the bottle after washing.

To Clean Brass. A

There are many substances and mixtures which will clean brass. Oxalic acid, muriatic acid, and several other acids will clean brass very effectively; oxalic acid is the best, but the acids must be well washed off, the brass dried, and then rubbed with sweet oil and tripoli, otherwise it will soon tarnish again. Mixture to clean brass is:

Soft soap .....1 ounce.
Rotten stone .....2 ounces.

To Clean Brass. B

Oxalic acid .....1 ounce.
Rotten Stone .....2 ounces.
Sweet oil .....1½ ounces.

Spirits of turpentine enough to make a paste.

When used, a little water is added and friction applied. If brass is very dirty, it requires a strong acid to make it bright; such is chromic acid, best prepared by mixing bichromate of potassa, sulphuric acid, and water, equal parts of each. This makes the dirtiest brass bright and clear at once, but it must be immediately washed off with plenty of water, rubbed dry, and polished with rotten stone. There are no patents on any of these proceedings; and if there were, the patentees would not be sustained in their claims.

To Clean Brass. C

Wash with rock alum, boiled in a strong lye in the proportion of 1 ounce to 1 pint; polish with dry tripoli.

To Clean Brass. D

The government method prescribed for cleaning brass, and in use at all the United States arsenals, is claimed to be the best in the world. The plan is to make a mixture of 1 part common nitric acid and ½ part sulphuric acid, in a stone jar, having also ready a pail of fresh water and a box of sawdust. The articles to be treated are dipped into the acid, then removed into the water, and finally rubbed with sawdust. This immediately changes them to a brilliant color. If the brass has become greasy, it is first dipped in a strong solution of potash and soda in warm water; this cuts the grease, so that the acid has free power to act.

To Clean Brass. E

Rub the surface of the metal with rotten stone and sweet oil, then rub off with a piece of cotton flannel, and polish with soft leather. A solution of oxalic acid rubbed over tarnished brass soon removes the tarnish, rendering the metal bright. The acid must be washed off with water, and the brass rubbed with whiting and soft leather. A mixture of muriatic acid and alum dissolved in water imparts a golden color to brass articles that are steeped in it for a few seconds.

To Clean Brass. F

First boil your articles in a pan with ordinary washing soda, to remove the old lacquer; then let them stand for a short time in dead nitric acid; then run them through bright dipping nitric acid. Swill all acid off in clean water, and brighten the relieved parts with a steel burnisher, replace in clean water, and dry out in beech sawdust. Next place your work on the stove till heated, so that you can with difficulty bear your hand on articles, and apply pale lacquer with brush, the work will burn if heated too much or too rapidly.

To Clean Brass. G

Put a coat of nitric acid over the part you want cleaned, with a piece of rag; as soon as it turns a light yellow, rub it dry and the brass will present a very clean appearance; if not satisfactory, repeat.

To Clean Brass. H

Oxalic acid and whiting mixed and applied wet, with brush, and brushed again when dry with soft plate brush to polish with dry whiting.

Brass Instruments. A

Brass Instruments.—If the instruments are very much oxidized, or covered with green rust, first wash them with strong soda and water. If not so very bad, this first process may be dispensed with. Then apply mixture of 1 part common sulphuric acid and 12 parts of water, mixed in an earthen vessel, and afterwards polish with oil and rotten stone, well scouring with oil and rotten stone, and using a piece of soft leather and a little dry rotten stone to give a brilliant polish. In future cleaning, oil and rotten stone will be found sufficient.

Brass Instruments. B

Take a strip of coarse linen, saturate with oil and powdered rotten

stone, put round the tubing of instrument, and work backward and forward; polish with dry rotten stone. Do not use acid of any kind, as it is injurious to the joints. To hold the instrument, get a piece of wood turned to insert in the bells; fix in a bench vise. The piece of wood will also serve for taking out any dents you may get in the bells.

Brass Instruments. C

Oil and rotten stone for this purpose, though very efficacious, are objectionable on account of dirt, the oil finding its way to the pistons, and because the instrument cleaned in this manner so soon tarnishes. Dissolve some common soda in warm water, shred into it some scraps of yellow soap, and boil it till the soap is all melted. Then take it from the fire, and when it is cool add a little turpentine and sufficient rotten stone to make a stiff paste. Keep it in a tin box covered from the air, and if it gets hard, moisten a small quantity with water for use.

Brass Instruments. D

If very much oxidized or covered with green rust, first wash it with strong soda and water. If not so very bad, this first process may be dispensed with. Then apply a mixture of 1 part of common sulphuric acid and 12 parts of water, mixed in an earthen vessel; wash well, first with clear water and then water containing some ammonia, afterward scouring well with oil and rotten stone, and using a piece of soft leather and a little dry rotten stone to give a brilliant polish. In subsequent cleaning oil and rotten stone will be found sufficient.

Brass work that is so dirty by smoke and heat as not to be cleaned with oxalic acid, should be thoroughly washed or scrubbed with soda, or potash water, or lye. Then dip in a mixture of equal parts of nitric acid, sulphuric acid, and water; or, if it cannot be conveniently dipped, make a swab of a small piece of woolen cloth upon the end of a stick, and rub the solution over the dirty or smoky parts; leave the acid on for a minute, and then wash clean and polish.

Paste for Cleaning Brass.

Starch ..... 1 part.
Powdered rotten stone.....12 parts.
Sweet oil ..... 2 parts.
Oxalic acid ..... 2 parts.
Water to mix.

Soft soap ..... 2 ounces.
Rotten stone ..... 4 ounces.
Beat them to a paste.
Rotten stone made into a paste with sweet oil.

Rotten stone ..... 4 ounces.
Oxalic acid ..... 1 ounce.
Sweet oil ..... 1½ ounces.
Turpentine enough to make a paste.

Oxalic acid ..... 1 part.
Iron peroxide .....15 parts.
Powdered rotten stone.....20 parts.
Palm oil .....60 parts.
Petrolatum ..... 4 parts.
See that solids are thoroughly pulverized and sifted, then add and thoroughly incorporate oil and petrolatum.

Cleaning Brass and Inlaid Work.

Mix tripoli and linseed oil, and dip felt into the preparation. With this polish; if the wood be rosewood or ebony, polish it with finely powdered elder ashes, or make a polishing paste of rotten stone, a pinch of starch, sweet oil, and oxalic acid, mixed with water.

To Restore Brass Gas Fixtures.

Have the water clean and boiling in two vessels. Dip in one water and then in the next as soon as taken from the nitric acid bath, so that there shall be no traces of acid on the fittings. Dry in box-wood sawdust while hot, and place upon a piece of hot sheet iron over a stove. As soon as all traces of water have left, quickly lacquer with very thin shellac varnish, using a camel's hair brush. You can make the lacquer, by dissolving shellac in best alcohol. Do not touch the metal with the fingers before lacquering.

To Clean Brass Gun Shells.

For such as have been used, boil in a strong solution of caustic soda, rinse in hot water, then dip in a hot pickle of sulphuric acid, 1 part; water, 4 parts; and rinse in hot water

To Clean Britannia Metal.

Use finely powdered whiting, 2 tablespoonfuls of sweet oil and a little yellow soap. Mix with spirits of wine to a cream. Rub on with a sponge, wipe off with a soft cloth, and polish with a chamois skin.

To Remove Stains from Broadcloth.

Grind fine 1½ ounces pipe clay; mix with 18 drops of alcohol and the same quantity spirits of turpentine. Moisten a little of this mixture with alcohol and rub on the stains. When dry, rub off with a woolen cloth.

To Cleanse Bronze.

Clean the surface, first of all, with whiting and water, or crocus powder, until it is polished; then cover with a paste of plumbago and crocus, mixed in the proportions that will produce the desired color. Heat the paste over a small charcoal fire. Perhaps the bronzing has been produced by a corrosive process; if so, try painting a solution of sulphide of potassium over the cleaned metal.

To Clean Bronze Statuary.

Use weak soap-suds or aqua ammonia.

To Wash Brushes.

Dissolve a piece of soda in some hot water, allowing a piece the size of a walnut to a quart of water. Put the water into a basin, and after combing out the hair from the brushes, dip them, bristles downward, into the water and out again, keeping the backs and handles as free from the water as possible. Repeat this until the bristles look clean; then rinse the brushes in a little cold water; shake them well, and wipe the handles and backs with a towel, but not the bristles, and set the brushes to dry in the sun, or near the fire; but take care not to put them too close to it. Wiping the bristles of a brush makes them soft, as does also the use of soap.

To Clean Calico and Linen.

When linen or calico is discolored by washing, age, or lying out of use, the best methid of restoring the whiteness is by bleaching in the open air, and exposure on the grass to the dews and winds. There may occur cases, however, where this may be difficult to accomplish, and where a quicker process may be desirable, and the following is the best:

Lay the linen for twelve hours in a lye formed of 1 pound soda to a gallon of boiling hot soft water; then boil it for half an hour in the same

liquid. Then make a mixture of chloride of lime with 8 times its quantity of water, which must be well shaken in a stone jar for three days, then allowed to settle, and being drawn off clear, the linen must be steeped in it thirty-six hours, and then washed out in the ordinary way. This will remove all discloration.

To Renovate Cane Seated Chairs.

Clean the articles with a solution of oxalic acid. Their color will be restored.

Wash with hot water and a sponge, using soap if necessary. Dry in a current of air.

To Renovate Canvas.

Coat it with a black leather varnish, such as the following:

Digest shellac	12 parts.
White turpentine	5 parts.
Gum sandarac	2 parts.
Lampblack	1 part.
Spirits of turpentine	4 parts.
Alcohol	96 parts.

To Clean Carpets.

If brooms are wet with boiling suds once a week, they will become very tough, will not cut a carpet, and will last much longer. A handful or so of salt sprinkled on a carpet will carry the dust along with it and make the carpet look bright and clean. A very dusty carpet may be cleaned by dipping the broom in cold water, shaking off all the drops, and sweeping a yard or so at a time. Wash the broom and repeat until the entire carpet has been swept.

Use 1 pint oxgall to a pailful of water; after washing apply cold water to rinse out the oxgall, and finally sponge as dry as possible.

Dry Cleaning.

Dry Cleaning.—Have ready a number of dry coarse cotton or linen cloths, some coarse flannels and one or more large pieces of coarse sponge; two or more hard scrubbing or scouring brushes, some large tubs or pans, and pails, and also a plentiful supply of both hot and cold water. First take out all grease spots; this may be effected in several ways. Well rub the spot with a piece of hard soap and wash out with a brush and cold water, and well dry each spot before leaving it.

Or use, instead of the soap, a mixture of fuller's earth, gall and water, well rinsing and drying each spot as before. When this has been done, the carpet may be cleaned by one of the three following methods:

How to Sweep Carpet.

It is not an easy matter to sweep well, at any rate, if we may judge by experience; for when a broom is put into the hands of the uninitiated, more harm than good generally results from the use of it. Without the greatest care and some little knowledge, furniture and paint, by being knocked about with the broom, may soon receive an irreparable amount of damage. Before sweeping rooms, the floors should be strewed with a good amount of dry tea leaves, which should be saved for the purpose; these will attract the dust and save much harm to other furniture, which, as far as possible, should be covered up during the process. Tea leaves also may be used with advantage upon druggets and short piled carpets. Light sweeping and soft brooms are here desirable. Many a carpet is prematurely worn out by injudicious sweeping. Stiff carpet brooms and the stout arms of inexperienced servants are their destruction. In sweeping thick

piled carpets, such as Axminster and Turkey carpets, the servant should be instructed to brush always the way of the pile; by so doing they may be kept clean for years; but if the broom is used in a different way, all the dust will enter the carpet and soon spoil it. Salt sprinkled upon the carpet before sweeping will make it look bright and clean. This is also a good preventive against moths.

To Remove Grape Stains from Carpet.

Wash out with warm soap-suds and a little ammonia water.

To Preserve Carriages.

Ammonia cracks varnish and fades the colors both of painting and lining. A carriage should never, under any circumstances, be put away dirty. In washing a carriage, keep out of the sun, and have the lever end of the "setts" covered with leather. Use plenty of water, which apply (where practicable) with a hose or syringe, taking care that the water is not driven into the body to the injury of the lining. When forced water is not attainable, use for the body a large soft sponge. This, when saturated, squeeze over the panels, and by the flow down of the water the dirt will soften and harmlessly run off, then finish with a soft chamois leather and oil silk handkerchief. The same remarks apply to the under works and wheels, except that when the mud is well soaked, a soft mop, free from any hard substance in the head, may be used. Never use a "spoke brush," which, in conjunction with the grit from the road, acts like sandpaper on the varnish, scratching it, and of course effectually removing all gloss. Never allow water to dry itself on the carriage, as it invariably leaves stains. Be careful to grease the bearings of the fore carriage so as to allow it to turn freely. Examine a carriage occasionally, and whenever a bolt or slip appears to be getting loose, tighten it up with a wrench, and always have little repairs done at once. Top carriages should never stand with the head down, and aprons of every kind should be frequently unfolded or they will soon spoil.

To Whiten Celluloid Collars and Cuffs.

If the coloring does not disappear when the affected portions are rubbed with a woolen cloth and a little tripoli, and then polished with a clean woolen rag, the injury is a permanent one.

Cream of tartar is excellent. Use with a little water.

To Clean Celluloid Covered Mountings.

Rub the covered parts with a woolen cloth and a little tripoli, and polish with a clean woolen rag.

To Clean China.

Use a little fuller's earth and soda or pearlash with your water.

To Clean Chromos.

Keep a wet towel lying on its face till the dirt is thoroughly softened, say 3 or 4 days, occasionalyy rubbing off carefully with a sponge; then rub with clear nut or linseed oil.

To Clean Clocks and Watches.

In cleaning clock and watch movements take 1 quart water, about 1 teaspoonful or 5 grains liquid ammonia or alkali; into this liquid should be grated or scraped fine 5 grains common soap. These proportions can be varied as desired, if the

following remarks are kept in view: The articles to be cleaned should be plunged into this bath, where they should be allowed to remain at least ten minutes. Twenty or thirty minutes is better, especially for clocks. The articles should be wiped dry when removed from the bath, or polished up with a brush dipped in some polishing powder. Rectified benzine is preferable, as ammonia is apt to turn the movement black if in excess. Use great care in using benzine, as it is very inflammable and never should be used at night.

To Clean Black Cloth.

Dissolve
Bicarbonate of ammonia.....1 ounce.
Warm water .....1 quart.

With this liquid rub the cloth, using a piece of flannel or black cloth for the purpose. After the application of this solution, clean the cloth well with clear water, dry and iron it, brushing the cloth from time to time in the direction of the fiber.

Cloth Cleaning Compound.

Glycerine .....1 ounce.
Sulphuric ether .....1 ounce.
Alcohol .....1 ounce.
Ammonia .....4 ounces.
Castile soap .....1 ounce.

Mix together and add sufficient water to make 2 quarts. Apply and rinse.

To Brush Clothes.

Brushing clothes is a very simple but very necessary operation. Fine clothes require to be brushed lightly, and with rather a soft brush, except where mud is to be removed, when a hard one is necessary, being previously beaten lightly to dislodge the dirt. Lay the garment on a table, and brush it in the direction of the nap. Having brushed it properly, turn the sleeves back to the collar, so that the folds may come at the elbow joints; next turn the lapels or sides back over the folded sleeves, then lay the skirts over level with the collar, so that the crease may fall about the center, and double one-half over the other, so that the fold comes in the center of the back.

To Clean Coins, Medals, Etc.

If the coins are silver, clean with potassium cyanide. This is a deadly poison, and should be handled with care.

Dip in strong hot solution of potash or soda, rinse and dip for a moment in nitric acid, after which rinse quickly in running water.

Coins can be quickly cleansed by immersion in strong nitric acid, and immediate washing in water. If very dirty, or corroded with verdigris, it is better to give them a rubbing with the following.

Pure bichromate of potash..½ ounce.
Sulphuric acid ..... 1 ounce.
Nitric acid ..... 1 ounce.

Rub over, wash with water, wipe dry, and polish with rotten stone or chalk.—Lyle.

To Restore Color.

When color on a fabric has been accidentally or otherwise destroyed by acid ammonia is applied to neutralize the same, after which an application of chloroform will, in almost all cases, restore the original color. The application of ammonia is common, but that of chloroform is but little known.

To Revive the Color of Faded Black Cloth or Leather.

Take the best quality of
Blue galls .....4 ounces.
Logwood .....1 ounce.

Clean sulp. iron (copperas).1 ounce.
Clean iron filings .....1 ounce.
Sumac leaves .....1 ounce.

Put the galls, logwood and sumac berries into 1 quart of the best white wine vinegar and heat to nearly the boiling point in a sand bath, then add the iron filings and copperas; digest for twenty-four hours and strain for use. Apply with a sponge.

To Clean Combs.

If it can be avoided never wash combs, as the water often makes the teeth split and the tortoiseshell or horn of which they are made rough. Small brushes, manufactured purposely for cleaning combs, may be purchased at a trifling cost; with this the comb should be well brushed, and afterward wiped with a cloth or towel.

To Clean Copper.

Take
Oxalic acid ..... 1 ounce.
Rotten stone ..... 6 ounces.
Gum arabic .....½ ounce.
All in powder.
Sweet oil ..... 1 ounce.

And sufficient of water to make a paste. Apply a small portion, and rub dry with a flannel or leather.

Use soft soap and rotten stone, made into a stiff paste with water, and dissolved by gently simmering in a water bath. Rub on with a woolen rag, and polish with dry whiting and rotten stone. Finish with a leather and dry whiting.

Copper plates are cleaned by laying them on the hob near the fire, and pouring on them some turpentine, and then rubbing them with a small soft brush.

To Clean and Bleach Coral.

The secret in cleaning coral is to turn the mass bottom upward and suspend it by means of a piece of wire in the saucepan, so that the dirt, as it boils off, may drop into the water, instead of down the septa. A strong solution of ordinary washing soda, or better, oxalic acid, is to be used to boil it in. The mass is to be boiled at least three hours. This is not only to clean the coral, but to bleach it also.

Apply a mixture of hydrochloric acid and water, or wash the coral with a stiff brush in cold salt and water, with a little soap powder, a little chloride of lime will improve it, then put in the sun to dry and bleach.

To Restore Crape.

Skimmed milk and water, with a little bit of glue in it, made scalding hot, is excellent to restore rusty Italian crape. If clapped and pulled dry like muslin, it will look as good as new; or, brush the veil till all the dust is removed, then fold it lengthwise, and roll it smoothly and tightly on a roller. Steam it till it is thoroughly dampened, and dry on the roller.

To Clean Crape.

Crape is cleaned by rinsing it in oxgall and water to remove the dirt, afterward in pure water to remove the gall, and lastly in a little gum water to stiffen and crisp it. It is then clapped between the hands until dry.

To Wash Curtains.

Shake every curtain, or hang them on a line and brush them down with a soft haired brush. Prepare a soaking liquid by melting a small quantity of borax in warm water, soak for an hour or two, then squeeze between the hands to remove the superfluous wa-

ter. Take some good soap and chip it in hot water, stir until all the soap is melted, and a fine lather produced. By this time the water will be moderately warm. Immerse the curtains in this, pass them repeatedly through the lathered water, or work them up and down. Rubbing should be avoided; when absolutely necessary, do it gently and without a brush. Squeeze out the soapy water, and rinse in plenty of soft warm water. Wring carefully. Curtains should be dried quickly. If in the country, they may be spread to dry on clean grass. Otherwise curtains are always better for being stretched and pinned to wooden frames while drying.

It is advisable to use cooked starch for curtains. Use good starch, mix it thoroughly in warm water, which should be made to boil for fifteen or twenty minutes. While cooling add a very little indigo blue. This is only to be used for pure white curtains. The starch should be decidedly thick. Draw the curtains through the starch, squeeze out gently, and dry rapidly.

Coloring Curtains.

Many persons prefer tinted curtains to pure white ones. If they have to be colored, do not put any blue in the starch, but use water that has been slightly tinted with coffee (for ecru curtains), tea for a more decided hue, or saffron (for yellow tint) for preparing the starch. A decoction of logwood may be used if you wish to give the curtains a delicate pink hue.

How to Prepare Special Coloring Starches for Curtains.

The basis of these coloring starches is thus prepared:

Soak 1 pound of good white glue for twelve hours, using just enough water to make it into a jelly; dissolve this with boiling water adding about 18 to 19 pounds of Paris white; add more water until the compound is diluted to the consistency of milk. This starch may be colored to taste. A little Prussian blue and vermilion (in the proportions of 2 to 1) gives a fine lilac. Raw umber and a pinch of lamp-black gives a gray. Vermillion and red lead (in the proportion of 3 to 1) produce a tender rose. Indigo blue just tinted with vermilion gives a lavender. Chrome yellow and a pinch of Spanish brown gives lemon yellow. Indian yellow and burnt sienna (in the proportion of 2 to 1) gives a buff hue. Experiments should be tried, as some of the colors look very badly if they are dark.

To Clean Diamonds.

Clean all diamonds and precious stones by washing them with soap and water with a soft brush, adding a little ammonia in the water, and then dry in fine boxwood sawdust. A little potash or pearlash put in the water will answer the same purpose.

To Clean Drawing Instruments.

If the lacquering is badly spotted, clean it off with strong alcohol, and then polish the brass or German silver with the following paste by means of flannel and a little water, and polish off with clean chamois leather or cotton cloth and a little whiting, after which you might re-varnish with shellac dissolved in alcohol, colored with a little dragon's blood, which can be got from any apothecary:

Soft soap	3 ounces.
Sweet oil	½ ounce.
Turpentine	¼ ounce.
Powdered rotten stone	4 ounces.

Finest flour emery ..... 1 ounce.
Fine powd. crocus of antimony .....½ ounce.

Melt the soap, oil and turpentine together, add the powders, a little water to make a stiff paste and mix well.

To Clean Engravings.

Presuming these to be mounted, proceed in the following manner: Cut a stale loaf in half, with a perfectly clean knife; pare the crust away from the edges. Place the engravings on a flat table, and rubbing the surface with the fresh cut bread, in circular sweeps, lightly but firmly performed, will remove all superficial markings. Soak the prints for a short time in a dilute solution of hydrochloric acid, say 1 part acid to 100 of water, and then remove them into a vessel containing a sufficient quantity of clear chloride of lime water to cover them. Leave them here until bleached to the desired point. Remove, rinse well by allowing to stand an hour in a pan in which a constant stream of water is allowed to flow, and finally dry off by spreading on clean cloths. Perhaps they may require ironing between two sheets of clean paper.

Put the engraving on a smooth board, cover it thinly with common salt finely powdered; squeeze lemon juice upon the salt so as to dissolve a considerable portion of it; elevate one end of the board, so that it may form an angle of about 45 degrees or 50 degrees with the horizon. Pour on the engraving boiling water from a tea kettle until the salt and lemon juice be all washed off; the engraving will then be perfectly clean, and free from stains. It must be dried on the board, or on some smooth surface, gradually. If dried by the fire or the sun, it will be tinged with a yellow color.

Hydrochloric acid, oxalic acid, or eau de Javelle may be employed, weakened by water. After the leaves (if it be a book) have by this means been whitened, they must be bathed again in a solution of sulphate of soda, which will remove all the chlorine, and leave the leaves white and clean. They will, however, have lost all firmness of texture, owing to the removal of the size from the paper. It will, therefore, be advisable to give a bath of gelatine and alum made with boiling water, to which may be added a little tobacco, or any other simple substance to restore the tint of the now too white paper.

Immerse each mildewed sheet separately in a solution made in the proportion of one-half pound chloride of lime to 1 pint of water. Let it stand, with frequent stirring, for 24 hours, and then strain through muslin, and finally add 1 quart water. Mildew and other stains will be found to disappear very quickly and the sheets must then be passed separately through clear water, or the chloride of lime, if left in the paper, will cause it to rot. Old prints, engravings, and every description of printed matter may be successfully treated in the same manner.

"I have in my time cleaned many hundreds. The plan which I adopt is as follows: I place them, one or two at a time, in a shallow dish, and pour water over them until they are completely soaked or saturated with it. I then carefully pour off the water, and pour on to the prints a solution of chloride of lime (1 part liquor calcis chloratae to 39 parts of water). As a general rule, the stains disappear as if by magic, but occasionally they are obstinate. When that is the case, I pour on the spot pure liquor calcis chlorate, and if that does not succeed,

I add a little dilute nitro-muriatic acid. I have never had a print which has not succumbed to this treatment—in fact, as a rule, they become too white. As soon as they are clean they must be carefully washed with successive portions of water until the whole of the chlorine is got rid of. They should then be passed in a very weak solution of isinglass or glue, and many collectors color this solution with coffee grounds, etc., to give a yellow tint to the print. They should be dried between folds of blotting paper, either in a press or under a heavy book, and finally ironed with an ordinary flat iron to restore the gloss, placing clean paper between the iron and the print grease stains are much more difficult. I find benzine best. Small grease spots may be removed by powdered French chalk being placed over them, a piece of clean blotting paper over the chalk, and a hot iron over that."—F. Andrews.

Mildew often arises from the paste used to attach the print. Take a solution of alum of medium strength and brush on back and face of the engraving 2 or 3 coats, then make the frame air-tight by pasting a strip of paper all round the inside of glass, leaving about one-half inch overlapping (taking care not to paste the paper onthe glass so as to be seen from tae front), then place your glass in frame, take the overlapping piece and paste to side of rabbet; place your picture in position, spring back board in, and then place a sheet of strong paper (brown) on the table, damp it, and paste round back of frame, lay it on to the paper, leave to dry, cut level. If this does not answer, there will be no help for it, but dust off as the mould accumulates. Do not brush on surface with the alum if the engraving is colored, but several coats on the back.

It has been found that ozone bleaches paper perfectly without injuring the fibre in the least. It can be used for removing mildew and other stains from engravings that have been injured by hanging on the walls of damp rooms. The engraving should be carefully moistened and suspended in a large vessel partially filled with ozone. The ozone may be generated by putting pieces of clean phosphorus in the bottom of the vessel partially covered with water; or by passing electric sparks through the air in the vessel.

If the engravings are very dirty, take two parts of common salt and one part common soda, and pound them together until very fine. Lay the engraving on a board, and fasten it with drawing pins, and then spread the mixture dry equally over the surface to be cleaned. Moisten the whole with warm water and a little lemon juice, and, after it has remained about a minute, or even less, tilt the board up on its end, and pour over it a kettleful of boiling water, being careful to remove all the mixture, and avoid rubbing. If the engraving is not very dirty, the less soda used the better, as it has a tendency to give the engraving a yellow hue.

To Cleanse Emery After Using.

Boil with caustic potash, stirring constantly, then wash with acid, dilute and dry.

To Remove Grease from Emery Wheels.

Wash with bisulphide of carbon.

Lightning Eradicator.

Strong ammonia water, 4 ounces; water, 2 quarts; saltpeter, 1 ounce; mottled soap, 2 ounces; the soap must be finely shaved. Mix thor-

oughly and allow the preparation to stand for several days before using. Cover any grease spot with this preparation, rub well and rinse with clean water.

To Clean Feathers.

To clean feathers from their own animal oil, steep them in 1 gallon of water mixed with 1 pound of lime; stir them well, and then pour off the water, and rinse the feathers in cold spring water. To clean feathers from dirt, simply wash them in hot water with soap. Rinse them in hot water.

To Clean White Ostrich Feathers.—4 ounces white curd soap cut small, dissolved in 4 pints water, rather hot, in a basin. Make the solution into a lather by beating it with birch rods or wires. Introduce the feathers and rub well with the hands for five or six minutes. After the soaping, wash in clean water as hot as the hand can bear. Shake until dry.

Slightly soften the soiled feathers with warm water, using a camel's hair brush. Next raise each feather with a flat piece of wood or paper knife, and clean them with spirits of wine. Dry with plaster of Paris, and afterward brush them carefully with a dry camel's hair brush.

Make a strong solution of salt in water, saturate a large and thick cloth with it. Wrap the bird up in the damp cloth in as many folds as you can, not disarranging the plumage. Look at the bird in six hours, and if not long dried on the blood will be soft; if not soft, keep it in the cloth longer, and rewet it. When soft, rub out with gentle pressure, putting something hard under each feather with blood on, and rubbing with the back of a knife. Of course each feather must be done separately.

Col. Wragge treated the soiled plumage of albatrosses, Cape Petrel, etc., by simply washing the feathers in rain water, after the process of skinning, and then laying a thick mixture of starch and water over the portion to be cleansed. Next he laid the birds aside, and left them till the plastering of starch had become thoroughly dry. He then removed the dry plaster by tapping it, and found that the feathers had become much cleaner. Old specimens may be cleansed in this way. Feathers may be set by just arranging them naturally with a needle or any pointed instrument.

White.—Dissolve 4 ounces of white soap in 2 quarts of boiling water, put it into a large basin or small pan, and beat to a strong lather with a wire egg beater or a small bundle of birch twigs; use while warm. Hold the feather by the quill with the left hand, dip it into the soap liquor and squeeze it through the right hand, using a moderate degree of pressure. Continue this operation until the feather is perfectly clean and white, using a second lot of soap liquor if necessary. Rinse in clean hot water to take out the soap, and afterward in cold water in which a small quantity of blue has been dissolved. Shake well, and dry before a moderate fire, shaking it occasionally, that it may look full and soft when dried. Before it is quite dry, curl each fibre separately with a blunt knife or ivory paper folder.

To Purify Feathers for Beds, Pillows, Etc.

Prepare a quantity of lime water in the following manner: Well mix 1 pound of quick-lime in each gallon of water required, and let it stand until all the undissolved lime is precipitated, as a fine powder, to the

bottom of the tub or pan, then pour off the clear liquor for use. The number of gallons to be prepared will, of course, depend on the quantity of feathers to be cleaned. Put the feathers into a clean tub, pour the lime water on them, and stir them in it until they all sink to the bottom. There should then be sufficient of the lime water to cover them to a depth of 3 inches. Let them stand in this for three or four days, then take them out, drain them in a sieve, and afterward well wash and rinse them in clear water. Dry on nets having a mesh about the same size as a cabbage net; shake the net occasionally, and the dry feathers will fall through. When they are dried, beat them well to get rid of the dust. It will take about three weeks to clean and dry a sufficient quantity for a bed. This process was awarded the prize offered by the Society of Arts.

Flannel Shrinking.

All flannel ought properly to be hrunk before it is cut out and made up into garments. The process is quite simple. Soak the flannel for a few minutes in warm water, then rub some good laundry soap over every inch of it, dip it in the water and knead it, or shake it up and down; do not scrub. After the washing, let the nannel be thoroughly rinsed in warm water. It must be remembered that boiling or hot water should never touch flannel. Wring carefully and dry slowly. On no account allow flannel to be dried in an overheated drying closet or before a fire.

Flannel Washing.

To wash flannel or flannel garments prepare a good lather in hot water; when just warm throw in your flannel and work it up and down, backward and forward. Scrubbing must be avoided, and no soap should be actually rubbed on it, as this will induce further shrinkage. Rinse in warm water, twice if necessary. Never wash or rinse in hot or cold water, as they both cause the flannel to shrink suddenly.

To Render Feathers White and to Remove the Gray Color.

Feathers must be cleansed by immersing for a short time in naphtha or benzine. Rinse in a second dish of the same and dry in the air. Then bleach by exposing in a box to the vapor of burning sulphur in a moist atmosphere.

To Wash Flannels.

Shave a little white soap into a pail, and pour on it water nearly boiling hot to dissolve it, adding, if you choose, a tablespoonful of spirits of ammonia. Pour the hot suds upon the flannels in a tub, and use a good pounder or a machine, as the water needs to be of too high a temperature for the hands. Wring the flannels, and put them into a second water, like the first, except with less soap, and use again the pounder or machine. Rub the soiled spots in the suds as hot as you can bear, but never rub soap on the spots. Wring the flannels as dry as you can with a good wringer, and put them on a line in a brisk, drying air. The hotter they are when wrung and the sooner they dry the better. Their color may be improved by a little bluing; and if they are well ironed before getting quite dry, fulling is prevented.

To Wash Flannel Blankets.

Put the soiled blankets to soak for fifteen minutes in plain soft warm

water. Prepare a soft jelly with first-class laundry soap and boiling water, 1 pound of soap for every blanket. Pour this into a tub of warm water, let it melt and lather it up well with the hand. Wring the blankets from the soaking tub, and throw them into the lather; stir them about and leave to soak ten minutes, then hand rub every inch of the blankets, paying especial attention to stains. Take them out and wring, then rinse in warm water twice. Dry well, but do not expose them to great heat. When dry stretch them in every direction, and rub all over with a piece of clean rough flannel. This makes them fluffy and soft. If very dirty, a little borax may be added to the water, but no soda or bleaching powder should ever be used.

To Iron Flannels.

Most flannels are the better for not being ironed, but in some cases it is necessary to do so. The proper way is to dry the flannels, then spread them on a ironing board, cover them with a slightly damp cloth, and iron over this, pressing down heavily. The iron must not be too hot.

Fleckenwasser.

Bronner.

Cleansing fluid (literally spot or stain water) for the removal of grease and dirt spots. Benzine only.

Englisches Fleckenwasser.

English cleansing fluid for removing acid, resin, wax, tar, and grease spots. A mixture of 95 per cent alcohol, 100 grammes; liq. ammon. sp. gr. 875, 30 grammes; benzine, 4 grammes.—Artus.

To Scour Floors.

Clean sand, 12 parts; soft soap, 8 parts; lime, 4 parts. Use a scrubbing brush and rinse.

To Remove Fly Specks from Brass, Etc.

If you cannot wash off the fly specks with soap and warm water on a cloth, there is no way that an amateur can refinish lampwork with any satisfaction. To do this the lamp must be taken apart and the brasswork boiled in caustic soda to remove all oil and varnish; then rinse in hot water and dip in strong nitric acid for a few seconds only, when it will come out clean and bright; then rinse clean in boiling water. Dry in sawdust, brush off, and lacquer with thin shellac varnish. The metal must be warm and perfectly free from grease.

To Remove Fly Specks from Bronze.

Lavender oil, 1 dram; alcohol, 1 ounce; water, 1½ ounces. Use a soft sponge and proceed quickly with little rubbing.

To Remove Fly Specks from Gilding.

Old ale is a good thing to wash any gilding with, as it acts at once on the fly dirt. Apply it with a soft rag.

To Renovate Frames.

You may improve them by simply washing them with a small sponge moistened with spirits of wine or oil of turpentine, the sponge only to be sufficiently wet to take off the dirt and fly marks. They should not be wiped afterwards, but left to dry of themselves.

Fruit and Wine Stains.

White cotton or linen, fumes of burning sulphur, warm chlorine water. Colored cottons or woolens, wash with tepid soapsuds of ammonia. Silks the same, with very gentle rubbing.

First rub the spots on each side with hard soap and then lay on a thick mixture of starch and cold water. Rub this mixture of starch well into the spot, and afterward expose it to the sun and air. If the stain has not disappeared at the end of three or four days, repeat the process.

Stains of wine may be quickly and easily removed from linen, by dipping the parts which are stained into boiling milk. The milk to be kept boiling until the stain disappears.

Most fruits yield juices which, owing to the acid they contain, permanently injure the tone of the dye; but the greater part may be removed without leaving a stain, if the spot be rinsed in cold water in which a few drops of aqua ammonia have been placed before the spot has dried. Wine stains on white materials may be removed by rinsing with cold water, applying locally weak solution chloride of lime, and again rinsing in an abundance of water. Some fruit stains yield only to soaping with the hand, followed by fumigation with sulphurous acid; but the latter process is inadmissible with certain colored stuffs. If delicate colors are injured by soapy or alkaline matters, the stains must be treated with colorless vinegar of moderate strength.

To remove fruit and wine stains from table linen moisten with dilute sulphuric acid and then rub with aqueous solution of sulphite or hyposulphite of soda in water.

Spread the stained part over a bowl or basin, and pour boiling water through it; or rub on salts of lemon and pour boiling water through until the stain disappears or becomes very faint.

How to Improve the Appearance of Furniture.

Mr. G. J. Henkels, of Philadelphia, Pa., suggests that when the polish on new furniture becomes dull it can be renewed by the following process: Take a soft sponge, wet with clean cold water, and wash over the article. Then take a soft chamois skin and wipe it clean. Dry the skin as well as you can by wringing it in the hands, and wipe the water off the furniture, being careful to wipe only one way. Never use a dry chamois on varnished work. If the varnish is defaced and shows white marks, take linseed oil and turpentine in equal parts; shake them well in a phial and apply a very small quantity on a soft rag until the color is restored; then with a clean soft rag wipe the mixture entirely off. In deeply carved work the dust cannot be removed with a sponge. Use a stiff haired paint brush instead of a sponge. The cause of varnished furniture becoming dull, and the reason why oil and turpentine restore its former polish, it will be appropriate to explain. The humidity of the atmosphere and the action of gas cause a bluish white coating to collect on all furniture, and show conspicuously on bright polished surfaces, such as mirrors, pianos, cabinet ware, and polished metal. It is easily removed as previously directed. The white scratches on furniture are caused by bruising the gum of which varnish is made. Copal varnish is composed of gum copal, linseed oil, and turpentine or benzine. Copal is not soluble in alcohol, as other gums are, but is dissolved by heat. It is the foundation of varnish, as the oil is used only to

make the gum tough, and the turpentine is required only to hold the other parts in a liquid state, and it evaporates immediately after its application to furniture. The gum then becomes hard and admits of a fine polish. Thus, when the varnish is bruised, it is the gum that turns white, and the color is restored by applying the oil and turpentine. If the mixture is left on the furniture, it will amalgamate with the varnish and become tough. Therefore the necessity of wiping it entirely off at once. To varnish old furniture, it should be rubbed with pulverized pumice stone and water to take off the old surface, and then varnish with varnish reduced, by adding turpentine, to the consistency of cream. Apply with a stiff haired brush. If it does not look well, repeat the rubbing with pumice stone, and when dry, varnish it again.

For a crack, a worm eaten hole, or a deep flaw, prepare the proper dust, by the admixture of brick dust in flour (also kept ready), or whiting or ocher, or any required tint. Then take well-cooked glue, and on a house plate stir it in slowly while hot, with sufficient powder for your work. Dab the hole or crack with your glue brush, then with a putty knife stir about the mixture on the plate, taking care you have the right color. When sure on this point, take some of the cement on the end of the knife and insert it in the desired place. Then use as much pressure as you possibly can with the blade, and keep smoothing at it. Sprinkle a little of the dry powder on the spot. When thoroughly dry, sand paper the surface with an old used piece, so as not to abrade the joint. You can then varnish the mending. Where weevil and wood worms have devoured the furniture, cautiously cut out the part till a sound place be reached. Poison the wood with a solution of sulphate of copper injected into the hollow. Let it dry. Cut an angular piece of same wood from your board, and with a sharp chisel make a suitable aperture for its reception. Fix it with glue. When thoroughly dry, work with carving tools or rasp and glass, scraping till the new bit of work exactly matches the old.

Polish for Removing Stains From Furniture.

One pint of 98 per cent alcohol, ground resin one-half ounce, gum shellac 1½ ounces. After the resin and shellac cut in the alcohol, mix in 1 pint of linseed oil, and give the whole a good shaking. Apply with a cloth or newspaper and polish with a flannel after applying the solution.

To Clean Dark Furs.

Sable, chinchilla, squirrel, fitch, etc. Heat a quantity of new bran in a pan, taking care that it does not burn, stir constantly. When well heated rub thoroughly into the fur. Repeat two or three times. Shake the fur and brush briskly until free from dust.

To Clean Light Furs.

White furs, ermine, etc., may be cleaned in the following way: Lay the fur on a table and rub with bran, moistened with warm water. Rub until dry, then rub with dry bran. Use flannel for rubbing with the wet bran and book muslin for the dry. After using the bran, rub with magnesia. Dry flour may be used instead of wet bran. Rub against the way of the fur.

To Clean Gilt Picture Frames.

Fly marks can be cleaned off with soap and water used sparingly on end

of finger covered by piece of rag. When all cleared off, rinse with cold water, and dry with chamois leather; next buy a pound of common size and two penny paint pans. Boil a little of the size in one of the pans with as much water as will just cover it. When boiled, strain through muslin into clean pan, and apply thinly to frames with camel hair brush (called technically a "dabber"). Take care you do not give the frames too much water and "elbow grease." On no account use gold size, as it is used only in regilding, and if put on over the gold would make it dull and sticky.

Dissolve a very small quantity of salts of tartar in a wine bottle of water, and with a piece of cotton wool soaked in the liquid dab the frames very gently, no rubbing on any account or you will take off the gilt, then stand up the frames so that water will drain away from them conveniently, and syringe them with clean water. Care must be taken that the solution is not too strong.

If new gold frames are varnished with the best copal varnish it improves their appearance considerably, and fly marks can then be washed off carefully with a sponge. The frames also last many times longer. It also improves old frames to varnish them with it.

Gilt frames may be cleaned by simply washing them with a small sponge, moistened with hot spirits of wine or oil of turpentine, the sponge only to be sufficiently wet to take off the dirt and fly marks. They should not afterward be wiped, but left to dry of themselves.

Old ale is a good thing to wash any gilding with as it acts at once upon the fly dirt. Apply it with a soft rag; but for the ins and outs of carved work, a brush is necessary; wipe it nearly dry, and don't apply any water. Thus will you leave a thin coat of the glutinous isinglass of the finings on the face of the work, which will prevent the following flies' faeces from fastening to the frame, as they otherwise would do.

To Clean Gilt Mountings.

Gilt mountings, unless carefully cleaned, soon lose their luster. They should not be rubbed, if slightly tarnished, wipe them off with a piece of Canton flannel, or what is better, remove them if possible, and wash in a solution of one-half ounce of borax dissolved in 1 pound of water, and dry them with a soft linen rag; their luster may be improved by heating them a little and rubbing with a piece of Canton flannel.

Glass Cleaning Preparation.

Photographers will find the following a useful glass-cleaning preparation: Water, 1 pint; sulphuric acid, one-half ounce; bichromate of potash, one-half ounce. The glass plates, varnished or otherwise, are left for 10 or 12 hours, or as much longer as desired, in this solution, then rinsed in clean water and wiped dry with soft white paper. The liquid quickly removes silver stains from the skin without any of the attendant dangers of cyanide of potassium.

To Clean Glass.

To clean glass in frames, when the latter are covered or otherwise so finished that water cannot be used, moisten tripoli with brandy, rub it on the glass while moist, and when dry rub off with a silk rag; to prevent the mixture injuring the cloth on the frame, use strips of tin bent to an

angle, set these on the frame with one edge on the glass; when the frames are of a character that will not be injured by water, rub the glass with water containing a little liquid ammonia and polish with moist paper.

Glass Bottles.—If vessels are oily or otherwise greasy, they should not be washed with water, but wiped with dry towel, or a dry dirty cloth, so as to remove as much grease as possible. By changing the cloth for one that is clean, the vessel can be wiped until all traces of grease disappear.

A strong solution of an alkali such as pearlash may be used, whereby the removal of the grease is materially facilitated.

If a vessel be soiled by resin, turpentine, resinous varnishes, etc., it should be washed with a strong alkaline solution, and rubbed by means of the wire and tow.

If the alkali fail to act, a little sulphuric acid may be employed with advantage. The latter acid will also be found advantageous in removing pitch and tar from vessels of glass. Nitric or sulphuric acids may be employed to clean flasks which have contained oil.

A correspondent of the Philadelphia Photographer says: "To clean a silver bottle, pour in a strong solution of cyanide; shake a few times, pour out, and rinse with water two or three times and your bottle is perfectly clean. Keep the solution. and filter and strengthen when required. By doing this you can sun your bath better in two hours than in a week's exposure in the dirty black bottles, photographers appear to delight in."

It would be easy for a practical brush maker to construct a brush in the form of a hollow cone, which would reach the bottom of bottles; but the difficulty would be to get it into the bottle without spoiling it (the brush). A brush composed of a single bundle of long hairs, something like a painter's sash tool, with the bristles cut somewhat tapering, should answer the purpose. The bottle must, of course, be turned round with the hand, to bring every part into contact with the brush.

Lead shot, where so used, often leave carbonate of lead on the internal surface, and this is apt to be dissolved in the wine or other liquids afterward introduced, with poisonous results; and particles of the shot are sometimes inadvertently left in the bottle. Fordos states that clippings of iron wire are a better means of rinsing. They are easily had, and the cleaning is rapid and complete. The iron is attacked by the oxygen of the air, but the ferruginous compound does not attach to the side of the bottle, and is easily removed in washing. Besides, a little oxidized iron is not injurious to health. Fordos found that the small traces of iron left had no apparent effect on the color of red wines; it had on white wines, but very little; but he thinks it might be better to use clippings of tin for the latter.

Take a small piece of the very finest and softest flannel without crease or seam, or a few inches of superfine broadcloth, dip this in powder blue, and with it clean your plate glass, polishing with a rag of soft silk or fine chamois leather.

To Cleanse Laboratory Glassware.

Laboratory flasks which have contained oil or fatty matter may be easily cleansed by a solution of permanganate of potassa. To remove turpentine, petroleum, photogene, etc.,

wash with an ounce or so of sulphuric acid and rinse with water.

To Clean Discolored Glass.

Apply dilute nitric acid. Water of ammonia is also good.

To Clean Gloves.

Ganteine.—A composition used to clean kid and other leather gloves. 1. Curd soap (in small shavings), 1 part; water, 3 parts; mix with heat, and stir in essence of citron, 1 part. —M. Buhan.

2. Saponine.—Duvignau soap in powder, 250 parts; water, 155 parts; dissolve with heat, cool, and add of eau de Javelle, 165 parts; solution of ammonia, 10 parts, and rub the whole to a smooth paste. A small portion of either of the above is rubbed over the glove with a piece of flannel (always in one direction) until it is sufficiently clean.

To Clean Kid Gloves.

Put them together with a sufficient quantity of pure benzine in a large stoppered vessel, and shake the whole occasionally, with alternate rest. If, on removing the gloves, there remain any spots, rub them out with a soft cloth moistened with ether or benzole. Dry the gloves by exposure to the air, and then place smoothly between glass plates at the temperature of boiling water until the last traces of benzine are expelled. They may then be folded and pressed between paper with a warm iron. Another way is to use a strong solution of pure soap in hot milk beaten up with the yolk of one egg to a pint of the solution. Put the glove on the hand, and rub it gently with the paste, to which a little ether may be added, then carefully lay by to dry. White gloves are not discolored by this treatment, and the leather will be made thereby clean and soft as when new.

Damp them slightly, stretch them gently over a wooden hand of appropriate size, and clean them with a sponge dipped in benzole, recently rectified oil of turpentine, or camphine. As soon as they are dry, withdraw them gently from the stretcher, and suspend them in a current of air for a few days, or until they cease to smell of the cleaning liquid used. Heat must be avoided. The cleaning liquid should be used liberally, and the first dirty portion should be sponged off with clean liquid.

Make a strong lather with curd soap and warm water; lay the glove flat on a board, the bottom of a dish, or other unyielding surface; dip a piece of flannel in the lather, and well rub the glove with it till all the dirt is out, turning it about so as to clean it all over. Dry in the sun or before a moderate fire. When dry they will look like old parchment and should be gradually pulled out and stretched.

Have a small quantity of milk in a cup or saucer, and a piece of brown Windsor or glycerine soap in another saucer. Fold a clean towel or other cloth three or four times thick, and spread the glove smoothly on the cloth. Dip a piece of flannel in the milk, and rub it well on the soap. Hold the glove firmly with the left hand, and rub it with the flannel toward the fingers. Continue this operation until the glove, if white, appears of a dirty yellow; or if colored, until it looks dirty and spoiled, and then lay it to dry. Gloves cleaned by this method will be soft, glossy and elastic.

French Method.—Put the gloves on your hands, and wash them in spirits

of turpentine until they are quite clean, rubbing them exactly as if washing your hands; when finished, hang them in a current of air to dry and to take off the smell of the turpentine.

Eau de javelle.....135 parts.
Ammonia ..... 8 parts.
Powdered soap .....200 parts.
Water .....150 parts

Make a soft paste, and use with a flannel.

Wash them with soap and water; then stretch them on wooden hands, or pull them into shape without wringing them; next rub them with pipe clay or yellow ocher, or a mixture of the two in any required shade, made into a paste with beer; let them dry gradually, and when about half dry rub them well, so as to smooth them and put them into shape; then dry them, brush out the superfluous color, cover them with paper, and smooth them with a warm iron. Other colors may be employed to mix with the pipe clay besides yellow ocher.

Glove Cleaner.

Castile soap, white.....3 troy ounces.
Javell water .....2 fl. ounces.
Water .....2 fl. ounces.
Water of ammonia.....1 dram.

Dissolve the soap by the aid of heat in the water, and when nearly cold, add the Javelle water and the water of ammonia. The preparation should form a paste, to be rubbed on the soiled part of the glove with a piece of flannel. This recipe is in use in many large cleaning establishments, and can be recommended.

To Clean Kid Gloves Without Wetting.

Stale bread is sometimes used for this purpose. The gloves are put on and the softer part of the bread is broken up into crumbs and the hands are rubbed one over the other as in the act of washing, the crumbs being thus rubbed over all parts of the gloves. Spongy rubber is often used for glove cleaning. It is applied in the same manner as in cleaning drawings, i. e., it is rubbed over the soiled parts of the glove.

Lay the gloves upon a clean board, make a mixture of dried fuller's earth and powdered alum, and pass them over on each side with a stiff brush. Then sweep the dust off and sprinkle them well with dry bran and whiting and dust them well. This, if the gloves be not execedingly soiled, will effectually cleanse them; but if they are much soiled, take out the grease with crumbs of toasted bread and powder of burnt bone, then pass them over with a woolen cloth, dipped in fuller's earth or powdered alum.

Doeskin, Wash Leather (Chamois) and Undressed Kid.

Wash them in luke warm soft water, with a little castile or curd soap, oxgall or bran tea; then stretch them on wooden hands; or pull them into shape without wringing them; next rub them with pipe clay, yellow ocher, or umber, or a mixture of them in any required shade, made into a paste with ale or beer; let them dry gradually, and when about half dry rub them well so as to smooth them, and put them into shape; when they are dry brush out the superfluous color, cover them with paper and smooth them with a warm (not hot) iron.

Take out the grease spots by rubbing them with magnesia or with cream of tartar. Then wash them with soap dissolved in water as directed for kid gloves, and afterward rinse them, first in warm water and then in cold. Dry in the sun, or be-

fore the fire. All gloves are better and more shapely if dried on glove trees or wooden hands.

Stretch them on a hand or lay them flat on a table, and rub into them a mixture of finely powdered fuller's earth and alum; sweep it off with a brush, sprinkle them with a mixture of dry bran and whiting, and lastly dust them off well. This will not do if they are very dirty.

To Clean Gold Bronze.

Boil in a weak alkali prepared from an infusion of wood ashes. Then clean with a solution composed of equal parts nitric acid, water and alum.

Gold Detergent.

(Upton.)

Quicklime, 1 ounce; sprinkle it with a little hot water to shake it, then gradually add 1 pint boiling water, so as to form a milk. Next dissolve pearlash, 2 ounces, in boiling water, 1½ pints. Mix the two solutions, cover up the vessel, agitate occasionally for an hour, allow it to settle; decant the clear, put it into flat ½ pint bottles, and cork them well. Use to clean gilding either alone or diluted with water. It is applied with a soft sponge, and then washed off with clean water. It is essentially a weak solution of potassa and may be extemporaneously prepared by diluting solution of potassa with about five times its volume.

Cleaning Dull Gold.

A solution of 80 grams chloride of lime, 80 grams bicarbonate of soda, and 20 grams common salt in 3 liters distilled water is prepared and kept in well-closed bottles. The article to be cleaned is allowed to remain some short time in this solution (which is only to be heated in the case of very obstinate dirt), then taken out, washed with spirit, and dried in sawdust.

Removing Stains from Gold and Silver.

Immerse for some time in a solution of ½ ounce cyanide of potassium to 1 pint rain water and brush off with prepared chalk.

To Wash Gold Lace.

It is placed over night in brine or wine and washed. Take 1½ pints water and 1½ pints whisky, and a little ground gum arabic and saffron. Apply with a brush when the laces are stretched on a table.

Removal of Stains from Granite.

A paste of 1 ounce oxgall, 1 gill of strong solution of caustic soda, 1½ tablespoonfuls of turpentine, with enough pipe clay to make it thick and consistent, scour well.

Mix together ¼ pound whiting, ¼ pound soft soap, 1 ounce washing soda, and a piece of sulphate of soda as big as a walnut. Rub it over the surface you propose to treat, let it stand twenty-four hours, and then wash off. If it succeeds, try another portion.

Smoke and soot stains can be removed with a hard scrubbing brush and fine sharp sand, to which add a little potash.

Use strong lye, or make a hot solution of 3 pounds of common washing soda dissolved in 1 gallon of water. Lay it on the granite with a paint brush.

To Remove Grass Stains.

Wash the stained places in clean, cold, soft water, without soap, before the garment is otherwise wet.

Removal of Grease.

Fatty oils have a greater surface tension than oil of turpentine, benzole or ether. Hence, if a grease spot on a piece of cloth be moistened on the reverse side with one of these solvents, the tension on the greasy side is larger, and therefore the mixture of benzole and fat or grease will tend to move toward the main grease spot. If we were to moisten the center of this spot with benzole, we should not remove it, but drive the grease upon the clean portion of the cloth. It is, therefore, necessary to distribute the benzole first over a circle surrounding the grease spot, to approach the latter gradually, at the same time having blotting paper in contact with the spot to absorb the fat immediately.

Another method, namely, to apply a hot iron on one side, while blotting paper is applied to the other, depends upon the fact that the surface tension of a substance diminishes with a rise of temperature. If, therefore, the temperature at different portions or sides of the cloth is different, the fat acquirs a tendency to move from the hotter parts toward the cooler.—The Pharmacist.

Grease and Oil.—For white linen or cotton goods, use soap or weak lye. For colored calicoes, warm soapsuds. For woolens, soapsuds or ammonia. For silks, benzine, ether, ammonia, magnesia, chalk, yolk of egg with water.

Dissolve 1 ounce pearlash in 1 pint water, and to this solution add a lemon cut into thin slices. Mix well, and keep the mixture in a warm state for two days, then strain and bottle the clear liquid for use. A small quantity of this mixture poured on stains, occasioned by either grease, oil or pitch, will speedily remove them. Afterward wash in clear water.

Carbonate of magnesia—magnesia that has been previously calcined is best—is dried in an oven and mixed with sufficient benzine to form a soft, friable mass. In this state it is put into a wide mouthed glass bottle, well stoppered and kept for use. It is spread pretty thickly over the stains, and rubbed well to and fro with the tip of the finger. The small rolls of earthy matter so formed are brushed off, and more magnesia is laid on and left until the benzine has evaporated entirely. Materials that will bear washing are then cleaned with water; on silks, alcohol or benzine should be used instead. The process may be applied to textile fabrics of every description, except those containing very much wool, to which the magnesia adheres very tenaciously. It may also be used for stains, old or new, on all sorts of fancy woods, ivory, parchment, etc., without risk of injury. Ordinary writing ink is not affected by it, but letterpress quickly dissolves, owing to the absorption of the fatty matter in the ink.

A method of cleansing greasy woolen or cotton rags and waste. The rags are thrown into a closed revolving drum, with a quantity of perfectly dry and finely powdered plaster of Paris; when the plaster has absorbed all the grease, the whole is transferred to another revolving drum, pierced with holes, by which means the greater portion of the greasy plaster is got rid of. The operation is finished by beating the rags on a kind of wooden sieve.

In the removal of grease from clothing, with benzol or turpentine, people generally make the mistake of wetting the cloth with the turpentine and then rubbing it with a sponge or piece of cloth. In this way the fat is dissolved, but is spread over a greater space and is not removed; the benzol or turpentine evaporates, and the fat covers

a greater surface than before. The way is to place soft blotting paper beneath and on top of the grease spot, which is to be first thoroughly saturated with the benzol, and then well pressed. The fat is then dissolved and absorbed by the paper, and entirely removed from the clothing.

Castile soap in shavings	4 ounces.
Carbonate of soda	2 ounces.
Borax	1 ounce.
Aqua ammonia	7 ounces.
Alcohol	3 ounces.
Sulphuric ether	2 ounces.

Soft water enough to make 1 gallon. Boil the soap in the water until it is dissolved, and then add the other ingredients. Although it is not apparent what good 2 ounces of ether can do in 1 gallon of liquid, the mixture is said to be very efficient.

Make a weak solution of ammonia by mixing the ordinary "liquor ammoniae" of the druggist with its own volume of cold water, and rub it well into the greasy parts, rinsing the cloth in cold water from time to time until the grease is removed. The ammonia forms a soap with the fatty acids of the grease, which is soluble in water.

On Paper.—Press powdered fuller's earth lightly upon the greasy spot, and allow it to soak out the grease.

Hannett says the spots may be removed by washing the part with ether, chloroform or benzine, and placing between white blotting paper, then passing a hot iron over.

A more expeditious and thought by some the best way is to scrape fine pipe clay, magnesia, or French chalk on both sides of the stain, and apply a hot iron above, taking great care that it is not too hot.

After gently warming the paper, take out all the grease you can with blotting paper and a hot iron, then dip a brush into essential oil of turpentine, heated almost to ebullition, and draw it gently over both sides of the paper, which must be kept warm. Repeat the operation until all is removed, or as often as the thickness of the paper may render necessary. When all the grease is removed, to restore the paper to its former whiteness, dip another brush in ether, chloroform, or benzine, and apply over the stain, especially the edges of it. This will not affect printer's or common writing ink.

Lay on a coat of India rubber solution over the spot, and leave it to dry. Afterward remove with a piece of ordinary India rubber. Any operation with ether, chloroform, or benzine should never be conducted by candle light, as their vapor is apt to kindle even at several feet from the liquid. Preceding will remove grease from colored calf. Even if the spot be on the under side of the leather, it may thus be clearly drawn right through.

Apply a solution of pearlash (in the proportion of 1 ounce pearlash to 1 pint water) to oil-stained drawing paper.

Grease can be removed from billiard or other cloths by a paste of fuller's earth and turpentine. This should be rubbed upon the fabric until the turpentine has evaporated, and a white powder remains. The latter can be brushed off, and the grease will have disappeared.

To Remove from Silk.—Use chloroform and a cotton cloth, finishing with a dry cloth. Benzine can also be used as well as French chalk. If chalk is used, place a hot iron over the spot until the grease is removed.

Spots of Grease.—On white goods, soap water or alkalies; on dyed tissues of cotton, hot soap water; dyed tissues of wool, soap water or ammo-

nia; on silk, benzine, ether, ammonia, magnesia, chalk yolk of egg.

Grease Extractor.

Fuller's earth.....15 parts.
French chalk.....½ part.
Yellow soap .....10 parts.
Pearlash ..... 8 parts.

Mix thoroughly and make it into paste with spirits of turpentine. Color if desired, with yellow ocher. Form into cakes.

An earthy compound for removing grease spots is made as follows: Take fuller's earth, free it from all gritty matter by elutriation with water; mix with ½ pound of the earth so prepared ½ pound of soda, as much soap, and 8 yolks of eggs well beaten up, with ½ pound of purified oxgall. The whole must be carefully triturated upon a porphyry slab, the soda with the soap in the same manner as colors are ground, mixing in gradually the eggs and the oxgall previously beaten together. Incorporate next the soft earth by slow degrees, till a uniform thick paste be formed, which should be made into balls or cakes of a convenient size and laid out to dry. A little of this detergent being scraped off with a knife, made into a paste with water and applied to the stain, will remove it.

To Remove Grease from Crocks and Jars.

Use hot water and sal soda.

To Clean Gutta Percha.

This can be done by using a mixture of soap and powdered charcoal, polishing afterward with a dry cloth with a little charcoal on it.

To Clean White Manilla Hats.

Sprinkle with water and expose to the fumes of burning sulphur in a tight box.

To Clean Felt Hats.

Clean with ammonia and water; if greasy, wash with fuller's earth. Size with glue size, and block while warm. Glue size made by diluting hot glue with hot water. Apply inside, not outside the hat. The thicker the glue, the stiffer the hat.

The stains of grease and paint may be removed from hats by means of turpentine or benzine, and if the turpentine leaves a mark, finish with a little spirits of wine.

To remove grease stains from silk hats, use first turpentine and then alcohol.

Cleaning Panama Hats.

To renovate white straw hats the following method has been recommended. Prepare two solutions as given:

I.—Sodium hyposulphite.....10 grams.
Glycerine ..... 5 grams.
Alcohol .....10 grams.
Water.....17 grams.
II.—Citric acid ..... 2 grams.
Alcohol .....10 grams.
Water .....90 grams.

First sponge the straw hat with solution No. I, and lay aside in a moist room (cellar) for twenty-four hours; then apply solution No. II and treat similarly as before. Finally the hat should be gone over with a flat-iron, not too hot. If very dirty, the hat must be cleaned with some detergent and dried before beginning the bleaching operation.—Western Druggist.

Alizarine Inks.

White goods, tartaric acid, the more concentrated the older are the spots.

On colored cottons and woolens, and on silks, dilute tartaric acid is applied, cautiously.

To Remove Ink and Iron Mould.

Equal parts of cream of tartar and citric acid, powdered fine, and mixed together. This forms the salts of lemon as sold by druggists.

Directions for using: Procure a hot dinner plate, lay the part stained in the plate, and moisten with hot water; next rub in the above powder with the bowl of a spoon until stains disappear; then rinse in clean water and dry.

To Clean Jet.

Remove all dust with a very soft brush, touch the jet with a bit of cotton, moistened with a little good oil, polish with wash leather. Clean with great care, as the jet is often brittle.

To Remove Kerosene Oil from Carpets.

Spread over the stain above and below warm pipe clay, and allow it to remain twenty-four hours; then brush it off and beat out the carpet.

To Remove Stains from Knives.

Cut a solid potato in two, dip one of the pieces in brick dust, such as is usually used for knife cleaning, and rub the blade with it.

Place the stained part flat in a plate or dish, and sprinkle crystals of oxalic acid upon it, adding a little water; the stains will soon disappear, when the linen should be well wrung out in two or three changes of clean water.

Dip the part in boiling water, and rub it with crystals of oxalic acid, then soak in a weak solution of chloride of lime—say 1 ounce to the quart of water. Under any circumstances, as soon as the stain is removed, the linen should be thoroughly rinsed in several waters.

The Journal de Pharmacie d' Anvers recommends pyrophosphate of soda for the removal of ink stains. This salt does not injure vegetable fiber, and yields colorless compounds with the ferric oxide of the ink. It is best to first apply tallow to the ink spot, then wash in a solution of pyrophosphate until both tallow and ink have disappeared.

Thick blotting paper is soaked in a concentrated solution of oxalic acid and dried. Laid immediately on a blot, it takes it out without leaving a trace behind.

Tin. chloride ..... 2 parts.
Water ..... 4 parts.

To be applied with a soft brush, after which the paper must be passed through cold water.

Hydrochloric acid and hot water, in the proportion of 8 of hot water to 1 of acid; if not strong enough, add more acid; when clear of stain, wash well and boil, to remove all traces of acid.

A weak solution of chloride of zinc.

To remove from clothes use a mixture of 4 parts of tartar and 2 parts of powdered alum. This is not injurious to clothes. Other stains may be removed with it.

To remove a blot, dip a camel hair brush in water, and rub over the blot, letting the water remain on a few seconds; then make as dry as you can with blotting paper, then rub carefully with India rubber. Repeat the operation if not all removed. For lines, circles, etc., dip the ink leg of your instruments in water, open the pen

rather wider than the line, and trace over, using blotting paper and India rubber, as for a blot. Applicable to drawing paper, tracing paper, and tracing linen. If the surface is a little rough after, polish with your nail.

To Remove Printer's Ink.

Put the stained parts of the fabric into a quantity of benzine, then use a fine, rather stiff brush, with fresh benzine. Dry and rub bright with warm water and curd soap. The benzine will not injure the fabric or dye.

Iron Spots and Black Ink.

White goods, hot oxalic acid, dilute muriatic acid, with little fragments of tin. On fast-dyed cottons and woolens, citric acid is cautiously and repeatedly appiled. Silks, impossible.

Iodine Stains on Paper.

Apply solution of pure sodium hyposulphite, and then strong ammonia water, by means of blotting paper; remove excess by pressing between sheets of bibulous paper moistened with water, and dry between clean warm (dry) blotting pads.

Iodin stains may be removed by alcohol.

Iron and Steel.

Take a spongy piece of fig tree wood and well saturate it with a mixture of sweet oil and finely powdered emery, and with this well rub all the rusty parts. This will not only clean the article, but will at the same time polish it, and so render the use of whiting unnecessary.

Bright iron or steel goods (as polished grates and fire irons) may be preserved from rust in the following manner: Having first been thoroughly cleaned, they should be dusted over with powdered quicklime, and thus left until wanted for use. Coils of piano wire are covered in this manner, and will keep free from rust for many years.

Dissolve ½ ounce camphor, and 1 pound hog's lard, and take off the scum; then mix with the lard as much black lead as will give the mixture an iron color. Rub the articles all over with this mixture, and let them lie for twenty-four hours; then dry with a linen cloth, and they will keep clean for months.

Table knives which are not in constant use should be put in a case containing a depth of about 8 inches of quicklime. They are to be plunged into this to the top of the blades, but the lime must not touch the handles.

Steel bits that are tarnished, but not rusty, can be cleaned with rotten stone, common hard soap, and a woolen cloth.

To Clean Iron.

To clean iron parts of machinery, tools, etc., two to three cents worth of paraffine chipped fine are added to one liter petroleum in a stoppered bottle, and during two or three days from time to time shaken up until the paraffine is dissolved. To apply it, the mixture is well shaken, spread upon the metal to be cleaned by means of a woolen rag or brush, and on the following day rubbed off with a dry woolen rag.

Yellow stains, commonly called iron mould, are removed from linen by hydrochloric acid or hot solution of oxalic acid. Wash well in warm water afterward.

To Remove Iron Rust.

This may be removed by salt mixed with a little lemon juice.

Salts of lemon, mixed with warm water and rubbed over the mark, will, most probably, remove the stains.

Throw on the stain a small quantity of the dry powder of magnesia, rubbing it slightly in with the finger, leaving it there for an hour or two, and then brushing it off, when it will be found that the stain has quite disappeared.

Fresh ink and the soluble salts of iron produce stains which, if allowed to dry, and especially if afterward the material has been washed, are difficult to extract without injury to the ground. When fresh, such stains yield rapidly to a treatment with moistened cream of tartar, aided by a little friction, if the material or color is delicate. If the ground be white, oxalic acid, employed in the form of a concentrated aqueous solution, will effectually remove fresh iron stains.

Removal of Smoke Stains from Ivory.

Immerse in benzine; if burned, there is no remedy.

To Wash Lace.

Cover an ordinary wine bottle with fine flannel, stitching it firmly round the bottle. Tack one end of the lace to the flannel, then roll it very smoothly round the bottle and tack down the other end, then cover with a piece of very fine flannel or muslin. Now rub it gently with a strong soap liquor, and, if the lace is very much discolored or dirty, fill the bottle with hot water and place it in a kettle or saucepan of suds and boil it for a few minutes, then place the bottle under a tap of running water to rinse out the soap. Make some strong starch, and melt in it a piece of white wax and a little loaf sugar. Plunge the bottle two or three times into this and squeeze out the superfluous starch with the hands; then dip the bottle in cold water, remove the outer covering from the lace, fill the bottle with hot water and stand it in the sun to dry the lace. When nearly dry take it very carefully off the bottle and pick it out with the fingers. Then lay it in a cool place to dry thoroughly.

First rip off the lace, carefully pick out the loose bits of thread, and roll the lace very smoothly and securely round a clean black bottle, previously covered with old white linen, sewed tightly on. Tack each end of the lace with a needle and thread to keep it smooth, and be careful in wrapping not to crumple or fold in any of the scallops or pearlings. After it is on the bottle, take some of the best sweet oil, and with a clean sponge wet the lace thoroughly to the inmost folds. Have ready in a wash kettle a strong, cold lather of clear water and castile soap. Fill the bottle with cold water, to prevent its bursting, cork it well and stand it upright in the suds, with a string round the neck secured to the ears or handle of the kettle, to prevent its knocking about and breaking while over the fire. Let it boil in the suds for an hour or more, till the lace is clean and white all through. Drain off the suds and dry it on the bottle in the sun. When dry, remove the lace from the bottle and roll it round a wide ribbon block, or lay it in long folds; place it within a sheet of smooth white paper, and press it in a large book for a few days.

To Clean Gold and Silver Lace.

Sew the lace in a clean linen cloth, boil it in 1 quart of soft water, and ¼ pound of soap, and wash it in cold water. If tarnished, apply a little warm spirits of wine to the tarnished spots.

A weak solution of cyanide of potassium cleans gold lace well.

To Revive Black Lace.

Make some black tea about the strength usual for drinking and strain it off the leaves. Pour enough tea into a basin to cover the quantity of lace, let it stand ten or twelve hours, then squeeze it several times, but do not rub it. Dip it frequently into the tea, which will at length assume a dirty appearance. Have ready some weak gum water, and press the lace gently through it; then clap it for a quarter of an hour; after which, pin it to a towel in any shape which you wish it to take. When nearly dry, cover it with another towel and iron it with a cool iron. The lace, if previously sound and discolored only, will after this process look as good as new.

Wash the lace thoroughly in some good beer; use no gum water; clap the lace well, and proceed with ironing and drying, as in the former recipe.

To Cleanse Wash Leather.

(Chamois Skin.)

A German optical journal recommends washing soiled polishing leather in a weak solution of soda and warm water, then rubbing a good deal of soap in the leather and letting it soften for two hours. It is afterward thoroughly washed until perfectly clean, and rinsed in a weak solution of warm water, soda, and yellow soap. It must not be washed in clean water, or it will become so hard when dry that it cannot be used again. It is the small quantity of soap remaining in the leather which penetrates its smallest particles and makes the leather as soft as silk. After the rinsing it is wrung out in a coarse hand towel and dried quickly. It is then pulled in every direction and well brushed, after which it is softer and better than most wash leather when first bought. If rough leather is used to finish highly polished surfaces, it will often be observed that the surface is scratched or injured. This is caused by particles of dust and even grains of hard rouge that were left in the leather. As soon as they are removed with a clean brush and rouge, a perfectly bright and beautiful finish can be obtained.

Use a weak solution of soda and warm water, rub plenty of soft soap into the leather, and allow it to remain in soak for two hours, then rub it sufficiently, and rinse in a weak solution of warm water, soda, and yellow soap. If rinsed in water only, it becomes hard when dry and unfit for use. After rinsing, wring out in a rough towel, and dry quickly, then pull it about and brush it well.

To Clean Leather.

Mix well together 1 pound of French yellow ocher and a dessertspoonful of sweet oil; then take 1 pound pipe clay and ¼ pound starch. Mix with boiling water; when cold lay on the leather; when dry, rub and brush well.

Removing Rust from a Lens.

A lens sometimes acquires a brown, rusty stain on the surface, which no amount of rubbing or cleaning will remove. By applying a paste composed of putty powder, or very fine rouge, and water to the stains, and then rubbing briskly with either the point of the finger or the side of the hand, every spot of rust or stain will be removed in a few minutes. This applies to photographic or other lenses, except the object glass of a telescope, which would be irreparably damaged by such treatment.

To Clean Lenses.

A very soft chamois skin is best; if greasy, wipe with a little tissue paper

wet with weak alkali. Lenses should be cleaned as rarely as possible; use old linen, not silk.

Lime, Lyes, Alkalies.

On white goods, simple washing in water. On dyed tissues of cotton and wool, and on silk, weak nitric acid poured droy by drop, and rub with the finger the spot previously moistened.

To Prevent Blistering in Linen.

Blistering is almost always due to bad starching, but occasionally to ironing the articles when too wet. Each article must be well starched through, and when about to iron damp it evenly, but do not wet it. Use a hot iron. Collars and cuffs that have to be turned down should be fixed in the proper shape immediately after each one is ironed, for then the starch is still flexible.

To Restore Whiteness to Scorched Linen.

One-half pint of vinegar, 2 ounces of Fuller's earth, 1 ounce of dried fowl's dung, one-half ounce soap, the juice of 2 large onions. Boil all these ingredients together to the consistency of paste; spread the composition thickly over the damaged part, and if the threads be not actually consumed, after it has been allowed to dry on, and the place has subsequently been washed once or twice, every trace of scorching will disappear.

To Polish Linen.

Put 2 drams of powdered wax 2 drams of powdered soap, and 4 drams of powdered French chalk in each pint of sharch.

To Clean Machinery.

To clean iron parts of machinery, tools, etc., about 10 grammes paraffin chipped fine are added, to 1 liter petroleum in a stoppered bottle, and during two or three days from time to time shaken up until the paraffin is dissolved. To apply it the mixture is well shaken, spread upon the metal to be cleaned by means of a woolen rag or brush, and on the following day rubbed off with a dry woolen rag.

Spots on Mahogany.

Stains and spots may be taken out of mahogany with a little aquafortis and water, or oxalic acid and water, rubbing the part by means of cork, till the color is restored, observing afterward to wash the wood well with water, and to dry and polish as usual.

To Remove Grease from Marble.

Apply a little pile of whiting or fuller's earth saturated with benzine, and allow it to stand some time.

Or apply a mixture of 2 parts washing soda, 1 part ground pumice stone, and 1 part chalk, all first finely powdered and made into a paste with water; rub well over the marble, and finally wash off with soap and water.

To Clean Marble.

Mix with water 5 parts soda, 2½ parts powdered chalk, 2½ partspumice stone (powdered). Wash the spots with this mixture; then wash off with soap and water.

To extract oil from marble or stone, soft soap, 1½ parts fuller's earth, 3 parts; potash, 1½ parts, boiling water to mix. Apply to the grease spots and let it remain two or three hours.

Marble, to Remove Oil Stains in.—Stains in marble caused by oil can be

removed by applying common clay saturated with benzine. If the grease has remained long enough it will become acidulated, and may injure the polish, but the stain will be removed. Boil one-half pound soft soap in 1 quart water, very slowly, until the water is reduced to 1 pint. Apply this in the same manner as the preceding.

Take 2 parts common soda, 1 part pumice stone, and 1 part finely powdered chalk; sift it through a fine sieve and mix with water; then rub it well all over the marble, and the stains will be removed; then wash the marble over with soap and water, and it will be as clean as it was at first.

A bullock's gall, 1 gill soap lees, one-half gill turpentine. Mix into a paste with pipe clay. Apply to the marble, allow it to remain two or three days, then rub off.

Cover the soiled part with a paste of quick-lime, moistened with a strong aqueous solution of sal soda for several hours; then remove the paste, wash the parts thoroughly, and polish if necessary.

Common soda, 3 parts; pumice stone, 1½ parts; finely powdered chalk, 1½ parts; sift very fine, and mix with water. Rub all over the marble. Wash well with soap and water.

If the marble is white, coat it with gum arabic and expose to the sun. When it peels off wash with water, or make a paste with fuller's earth and hot water, cover the spots therewith, let it dry on, and next day scour off with soft soap. The luster can be restored by rubbing with a dry cloth.

Be sure that the dust is all brushed from the marble. Rub with the following: Whiting, 6 ounces; soft soap, 6 ounces; soda, 1½ ounces; a piece of stone blue size of a large walnut. Mix and rub on the marble with a flannel cloth. Let it remain for twenty-four hours. Wash off and polish with a piece of flannel.

To take Stains from White Marble.—Turpentine, 2¼ tablespoonfuls; lye, 1½ gills; oxgall, 1½ ounces; pipe clay, q. s. to make a paste. Apply the paste to the stain and let it remain for several days. Iron mould or ink spots may be taken out by dissolving in 1½ pints rainwater, 1½ ounces of oxalic acid and ¾ ounce butter antimony flour sufficient to make the mixture of a proper consistency. Put on with a brush, let it remain a few days, wash off. Grease spots may be removed by applying common clay saturated with benzine.

Ink Stains on Marble.—Dissolve 1 ounce antimony trichloride and 2 ounces oxalic acid in 1 quart of water. Add flour enough to make a paste. Leave on the spot for a few days until the spot is removed.

Iron Stains on Marble.—Boil your marble in a strong solution of caustic soda, then take out, and rub well. Soon all the stains will come out.

Matches, to Remove Marks Made by.—Spots from sulphur and phosphorous caused by lucifer matches can be extracted from marble by carbon disulphide; or take 2 parts of common soda, 1 part of pumice stone and 1 part of finely powdered chalk; sift it through a fine sieve and mix it with water; then rub it well all over the marble, and the stains will be removed, then wash the marble over with soap and water, and it will be as clean as it was at first.

To Clean Matting.

Wash with water in which bran has been boiled, or in weak salt and water. Dry it well with a cloth.

Mildew.

Well mix together a spoonful of table salt, 2 of soft soap, 2 of powdered starch, and the juice of a lemon. Lay this mixture on both sides of the stain with a painter's brush, and then lay the article on the grass, day and night, until the stain disappears.

Get a piece of flannel, dip it into whisky, and well rub the place marked; then iron on the wrong side, taking care to put a piece of damp cotton cloth between the iron and silk, and iron on the cotton cloth, which will prevent the silk assuming a shiny glazed appearance.

Wash clean and take every particle of soap off, then put the linen into a galvanized bath or tub full of clean cold water, procure a little chloride of lime, and tie it up in a muslin bag or piece of muslin, dissolve the lime in lukewarm water by squeezing the bag, then pour the water among the clothes, stir and leave them for 24 hours, but do not put too much lime in, or you will rot the clothes; then well rinse in cold water.

Hypochlorite of alumina is said to be one of the best remedies. Moisten with water, rub well into the cloth, moisten again with dilute sulphuric acid (1 to 20), and after half an hour, rinse thoroughly in soft water and then in water containing about an ounce to the gallon of sulphite or hyposulphite of soda. A stiff brush may be advantageously employed in applying the hypochlorite.

Mildew, to Prevent.—Housekeepers are often greatly troubled and perplexed by mildew from damp closets and from rust. By putting an earthen bowl or deep plate full of quicklime into the closet, the lime will absorb the dampness and also sweeten and disinfect the place. Rats, mice, and many bugs that are apt to congregate in damp places have a dislike to lime. As often as the lime becomes slaked throw it on the compost heap if in the country, or into the ash barrel if in the city.

Mildew, to Prevent in Canvas, etc. —Dissolve 1 pound zinc sulphate in 40 gallons water, and then add 1 pound sal soda. When dissolved, 2 ounces tartaric acid are added. This holds the partially separated zinc carbonate without neutralizing the excess of alkali used. The canvas, etc., should be soaked in this solution for 24 hours, and then dried without wringing.

Mildew, to Remove from Brickwork.—Builders' acid (hydrochloric acid) is often used for removing white stains from brickwork. Its efficacy in the case of mildew would be doubtful. A coat of linseed oil on the perfectly dry brick work would have a good preventive tendency. Melted paraffin applied hot, and worked in with a paint burner would also be efficacious. Perhaps either of the last named applications would destroy the mildew or white stain also. Acid used by an experienced man would not injure the joints.

Canvas, Rendering it Mildew-proof. —Saturate the cloth in a hot solution of soap (one-quarter pound to a gallon of water); wring out and digest it for twelve hours in solution of one-half pound alum to 1 gallon of water.

Use the following: Alum, 2 pounds, dissolved in 60 pounds water blue vitrol, 2 pounds, dissolved in 8 pounds of water, to which is added gelatine, 1 pound, dissolved in 30 pounds water; lead actate, one-half pound dissolved in 30 pounds water. The solutions are all hot, and separately mixed, with the exception of the vitriol, which is added.

Treatment with strong aqueous solution of alum or lead acetate answers very well.

To Remove from Canvas.—Wash with solution of calcium hypochlorite (bleaching powder) in cold water or vinegar. Use plenty of cold water afterward.

Cotton Goods, to Remove from.—If the goods are colored, soak for twenty-four hours or more in sour milk or buttermilk, then rinse in water, and wash in strong soapsuds. If the goods are white, moisten the spots repeatedly with Javelle water diluted with 10 volumes of water, rinse well, then wash in strong soapsuds, not too hot.

Gold Lace, to Remove Mildew from.—For this purpose no alkaline liquors are to be used; for while they clean the gold, they corrode the silk, and change or discharge its color. Soap also alters the shade, and even the species of certain colors. But spirit of wine may be used without any danger of its injuring either color or quality, and in many cases proves as effectual for restoring the luster of the gold as the corrosive detergents. But though the spirit of wine is the most innocent material employed for this purpose, it is not in all cases proper. The golden covering may be in some places worn off, or the base metal, with which it has been alloyed, may be corroded by the air, so as to have the particles of gold disunited, while the silver underneath, tarnished to a yellow hue, may continue of a tolerable color; so it is apparent that the removal of the tarnish would be prejudicial, and make the lace less like gold than it was before.

Linen, Mildew from.—Take soap and rub it well; then scrape some fine chalk, and rub that also in the linen, lay it on the grass as it dries, wet it a little, and it will come out at once. Two tablespoonfuls of soft soap and the juice of a lemon. Lay it on the spots with a brush, on both sides of the linen. Let it lie a day or two till the stains disappear.

Nets, to Prevent from Rotting.—The following treatment is said to preserve nets for a long time in a good condition: Soften 1 pound good glue in cold water; then dissolve it in 10 gallons of hot soft water, with one-half pound curd soap. Wash the nets in soft water, then boil them in this for two hours, press out excess of the liquid and hang up overnight. The second bath consists of alum, 2 pounds; water, 5 gallons; heat nearly to boiling, and immerse the nets in this for about three hours, then press and transfer to a strong decoction of oak bark or a solution of sumac in warm water (water, 5 gallons, sumac, 8 pounds), and let them remain immersed in this for forty-eight hours, or longer, if convenient.

To Remove Mildew from Paper.

Soak one ounce of gelatine for some hours in 1 pint of water, and 1 ounce of white soap scraped, in the same quantity of water; mix the two solutions and boil till dissolved. Dissolve 1 dram of alum in 2 ounces of water, and add it to the above. When the mixture is cold, decant the solution from all sediment. Spread the above over the damaged paper with a stout feather. If the paper be in a very bad state, a second coat may be applied. A little spirits of wine added to the solution tends to keep it good.

The Preservation of Ropes

The ropes should be dipped, when dry, into a bath containing 20 grammmes of sulphate of copper per liter of water, and kept in soak in

this solution for four days, afterward being dried. The ropes will thus have absorbed a certain quantity of sulphate of copper, which will preserve them from the attacks of animal parasites and from rot. The copper salt may be fixed in the fiber by a coating of tar or by soapy water. For tarring the rope it is best to pass it through a bath of boiled tar, hot, drawing it through a thimble to press back the excess of tar, and suspending it afterward on a staging to dry and harden. In the second method, the rope is soaked in a solution of 100 grammes of soap per liter of water. The copper soap thus formed in the fiber of the rope preserves it from rot even better than the tar, which acts mechanically to imprison the sulphate of copper, which is the real preservative. It is not stated whether the copper treatment is equally serviceable with dressed as with plain hemp ropes.

Ropes, to Prolong the Life of.—To prolong the duration of ropes, steep them in a solution of sulphate of copper, 1 ounce to 1 quart of water, and then tar them.

Stone, Mildew or Mould, to Remove from.—Try a little strong aqueous solution of caustic soda. It should remain ten minutes in contact with the stone, which, after washing with water, should be well rubbed with a stiff brush or broom.

To Remove Milk and Coffee Stains.

These stains are very difficult to remove, especially from light colored and finely finished goods. From woolen and mixed fabrics they are taken out by moistening them with a mixture of 1 part glycerine, 9 parts water, and one-half part aqua ammonia. This mixture is applied to the goods by means of a brush, and allowed to remain for twelve hours, occasionally renewing the moistening. After this time, the stained pieces are pressed between cloth, and then rubbed with a clean rag. Drying, and if possible a little steaming, is generally sufficient to thoroughly remove the stains.

Stains on silk garments which are dyed with delicate colors, or finely finished, are more difficult to remove. In this case 5 parts glycerine are mixed with 5 parts water, and one-fourth part of ammonia added. Before using this mixture it should be tried on some part of the garments where it cannot be noticed, in order to see if the mixture will change the color. If such is the case, no ammonia should be added. If, on the contrary, no change takes place, or if, after drying, the original color is restored, the above mixture is applied with a soft brush, allowing it to remain on the stains for six or eight hours, and is then rubbed with a clean cloth. The remaining dry substance is then carefully taken off by means of a knife. The injured places are now brushed over with clean water, pressed between cloths and dried. If the stain is not then removed, a rubbing with dry bread will easily take it off. To restore the finish, a thin solution of gum arabic, or in many cases beer is preferred, is brushed on, then dried, and carefully ironed. By careful manipulation these stains will be successfully removed.

To Remove Nitric Acid Stains.

According to Reimann's Faerber Zeitung, these yellow stains, so familiar to the chemist and druggist, can be removed either from theskin or from brown or black woolen garments by moistening the spots for a while with permanganate of potash

and rinsing with water. A brownish stain of manganese remains, which may be removed from the skin by washing with aqueous solution of sulphurous acid. If the spots are old, they cannot be entirely removed.

Nitric Acid Stains, to Remove from the Hands.—Touch the stains with solution of permanganate of potassium; wash, rinse in dilute hydrochloric acid, and wash again.

To Renovate Oil Cloths.

Dissolve 2½ pounds paraffin and 1 gallon oil of turpentine by the aid of a gentle heat, and apply with a sponge or piece of flannel, while warm. Let it remain on the oil cloth twenty-four hours; then polish with flannel. This solution not only renovates but preserves the cloth. It has been used on oil cloths which have been down four years, and they look as good as new. The same preparation may also be used on painted floors. When rubbed with flannel, it will have a beautiful gloss, equal to varnish.

To Clean Oil Cloth.

Wash with a large soft woolen cloth and lukewarm or cold water, dry thoroughly with a soft cloth, and afterward polish with milk, or a weak solution of beeswax, in spirits of turpentine. Never use a brush, or hot water, or soap, as either will be certain to bring off the paint.

Wash with equal quantities of milk and water. Once in several months a little linseed oil may be used. It must be well rubbed in and polished with a piece of silk.

Oil Colors, Varnish and Resins.

On white or colored linens, cottons, or woolens, use rectified oil of turpentine, alcohol lye, and their soap. On silks, use benzine, ether, and mild soap, very cautiously.

Oil Stains on Paper.

Use pipe clay mixed with water. Allow it to remain on the spot for several hours.

To Remove Oil Stains from Floors.

Use oxalic acid and water, then wash well with soda and soap.

To Clean Paint Brushes.

When a paint brush is stiff and hard through drying with paint on it, put some turpentine in a shallow dish and set it on fire. Let it burn for a minute until hot, then smother the flame and work the pencil in the fingers, dipping it frequently into hot spirits. Rinse all paint brushes, pencils, etc., in turpentine, grease with a mixture of sweet oil and tallow, to prevent them from drying hard, and put them away in a close box.

To soften brushes that have become hard, soak them twenty-four hours in raw linseed oil, and rinse them out in hot turpentine, repeating the process till clean; or wash them in hot soda and water and soft soap.

To Clean Paint.

To clean paint, provide a plate with some of the best whiting to be had; have ready some clean warm water and a piece of flannel, which dip into the water and squeeze nearly dry; then take as much whiting as will adhere to it, and apply it to the painted surface, when a little rubbing will instantly remove any dirt or grease. After which, wash the part well with clean water, rubbing it dry with a soft chamois. Paint thus cleaned

looks as well as when first laid on, without any injury to the most delicate colors. It is far better than using soap, and does not require more than half the time and labor.

To clean paint, take 1 ounce pulverized borax, 1 pound small pieces best brown soap, and 3 quarts water; let simmer till the soap is dissolved, stirring frequently. Do not let it boil. Use with a piece of old flannel, and rinse off as soon as the paint is clean. This mixture is also good for washing clothes.

Dissolve one-half ounce glue and a bit of soft soap the size of a walnut in about 3 pints of warm water, and with a well-worn whitewash brush well scrub the work, but not sufficient to get off the paint, and rinse with plenty of cold clean water, using a wash leather; let dry itself. Work done in this manner will often look equal to new.

First take off all the dust with a soft brush and a pair of bellows. Scour with a mixture of soft soap and fuller's earth, and use lukewarm water. If there are any spots which are extra dirty, first remove these by rubbing with a sponge dipped in soap and water. Commence the scouring at the top of the door or wainscot, and proceed downward; and dry with a soft linen cloth. When cleaning paint, it is always better to employ two persons, one to scour and the other to rub dry.

To Remove Paint.

Scraping or burning it off is extremely laborious, and too slow for general purposes. A more thorough and expeditious way is by chemical process, using for that purpose a solution of soda and quicklime in equal proportions. The solution may be made as follows: The soda is dissolved in water, the lime is then added, and the solution is applied with a brush to the old paint. A few moments are sufficient to remove the coats of paint, which may be washed off with hot water. The oldest paint may be removed by a paste of the soda and quicklime. The wood should be afterward washed with vinegar or an acid solution before repainting to remove all traces of the alkali.

Wet the place with naphtha, repeating as often as required; but frequently one application will dissolve the paint. As soon as it is softened rub the surface clean. Chloroform, mixed with a small quantity of spirit ammonia, composed of strong ammoniac, has been employed very successfully to remove the stains of dry paint from wood, silk and other substances.

To Remove from Floors.—Take 1 pound American pearlash, 3 pounds quick stone lime, slake the lime in water, then add the pearlash, and make the whole about the consistence of paint. Lay the mixture over the whole body of the work which is required to be cleaned, with an old brush; let it remain for 12 or 14 hours, when the paint can be easily scraped off.

To Soften Putty and Remove Old Paint.

Take 3 pounds of quick stone lime, slake the lime in water, and then add 1 pound of American pearlash. Apply this to both sides of the glass, and let it remain for twelve hours, when the putty will be softened, and the glass may be taken out without being broken. To destroy paint apply it to the whole body of the work which is required to be cleaned; use an old

brush, as it will spoil a new one; let it remain about twelve or fourteen hours and then the paint may be easily scraped off.

To remove paint from old doors, etc., and to soften putty in window frames, so that the glass may be taken out without breakage or cutting, take 1 pound of pearlash and 3 pounds of quicklime; slake the lime in water, and then add the pearlash, and make the whole about the consistence of paint. Apply it to both sides of the glass, and let it remain for twelve hours, when the putty will be so softened that the glass may be taken out of the frame without being cut and with the greatest facility. To destroy paint lay the above over the whole body of the work which is required to be cleaned, using an old brush (as it will spoil a new one); let it remain for twelve or fourteen hours, when the paint can be easily scraped off.

Paint Stains on Glass.—American potash, 3 parts; unslaked lime, 1. Lay this on with a stick, letting it remain for some time, and it will remove either tar or paint.

Common washing soda dissolved in water. Let it soak awhile—if put on thick, say 30 minutes—and then wash off. If it does not remove, give it another application.

Paint, Varnish and Resin Stains on Clothes.

For white or colored cotton and woolen goods, oil of turpentine or benzine, followed by soapsuds. For silk, benzine, ether, soap; hard rubbing is to be avoided. For all kinds of fabrics chloroform is best, but must be carefully used.

Stains of paint or varnish, after being softened with olive oil or fresh butter, may generally be removed by the same means as ordinary grease spots.

Saturate the spots with a solution of equal parts turpentine and spirits of ammonia; wash out with strong soapsuds.

Paint stains that are dry and old may be removed from cotton or woolen goods with chloroform. First cover the spot with olive oil or butter.

To Clean Paintings.

Dissolve a little common soda in urine, then add a grated potato and a little salt; well rub this over the paintings till clean. Wash off in spring water and dry with a clean cloth.

First rub the picture well with good whisky, which will make the varnish come off in froth, then wash well with cold water, and when dry varnish again; this will restore the picture to its original color unless very old. Keep the picture covered from dust until the varnish is dry.

Renovation of Papier Mache Goods.

One-half pint linseed oil, one-half pint old ale, the white of an egg, 1 ounce spirits of wine, 1 ounce hydrochloric acid; well shake before using. A little to be applied to the face of soft linen pad, and lightly rubbed for a minute or two over the articles to be restored, which must afterward be polished off with old silk handkerchief. This will keep any length of time if well corked. Invaluable for delicate cabinet work.—Dustpan.

Wash with water, dredge with flour, and polish with a dry flannel cloth.

To Extract Paraffin Oil from Floor.

A strong hot solution of oxalic acid applied, and by the after use of the

scrubbing brush, you will remove all the stains from your boards.—A. E. B. Smith.

To Clean Parchment.

Immerse the parchment in a solution of acetic acid, and gently rub the stained parts while wet on a flat board with lump pumice, then bleach it with chloride of lime. This process was recommended in the English Mechanic. It is not very successful, but it makes it white enough for bookbinding. It has, however, the objectionable qualities of not making the parchment flexible, and when dried it is as hard as a board, and it has no gloss like the virgin parchment. On no account must the parchment be washed in very hot water, or held before a fire, as it will shrivel up in a most provoking manner.

To Clean Pearls.

Soak them in hot water in which bran has been boiled, with a little cream of tartar and alum, rubbing gently between the hands when the heat will admit of it. When the water is cold renew the application till any discoloration is removed, rinse in lukewarm water; lay them on white paper in a dark place to cool.

Piques and Colored Muslins.

French method: Make a strong lather with best white soap dissolved in soft water, and use while rather warm, but not hot. Wash the dress in this, but do not soak it previously. As soon as the lather appears soiled squeeze out the dress, throw away the lather, and wash the dress again in a second lot, and so continue until the dress is thoroughly clean. Then well rinse in cold water, and afterward in cold water slightly blued. Squeeze all the water out of the dress, but do not wring it, and hang in a shady place to dry, or, if the weather be wet, dry it before the fire. When dry they are to be starched. It is in this operation that the failures in getting up muslins and piques more often occur than in the washing. Use a large basin and have plenty of starch, and dissolve in the starch, according to the quantity of it, 3 or 4 in. of composite or wax candle. Squeeze the starch well out of the dress, and while it is still wet put it between some old sheets or table cloths, and pass it between the rollers of a wringing machine or under a mangle; by this means all lumps of starch will be removed. Finish by ironing. Piques should be ironed on the wrong side, as lightly as possible.

To Renovate Plush.

To restore plush, hold the wrong side over steam arising from boiling water, until the pile rises; or dampen lightly the wrong side of the plush, and hold it over a pretty hot iron, not hot enough to scorch, however, or make a clean brick hot: place upon it a wet cloth, and hold the plush over it, and the steam will raise it.

To Clean Iron Pots.

Put a few ounces of washing soda (sodium carbonate) into the pot, fill with water, and boil until the inside looks clean.

Lightning Renovator.

Castile soap, 4 oz.; hot water, 1 qt. When the soap is dissolved, add water, 4 qt.; water of ammonia, 4 fl. oz.; sulphuric ether, 1 fl. oz.; glycerine, 1 fl. oz.; alcohol, 1 oz. Medical Brief states that this is an excellent preparation for removing grease.

To Clean Goatskin Rugs.

One washing with warm (not hot) suds will not materially hurt the skin itself. The skin may not seem quite so soft after the washing, but if the washing is done quickly, the skin well rinsed in cold water, and dried with only moderate warmth, being frequently turned and shaken, the difference will hardly be perceptible.

To Remove Rust Spots.

By adding 2 parts cream of tartar to 1 part oxalic acid ground fine and kept dry in a bottle, you will find, by applying a little of the powder to rust stains while the article is wet, that the result is much quicker and better. Wash out in clear warm water to prevent injury to the goods.

Rust, Black Ink.

On white goods, warm solution oxalic acid; weak muriatic acid. On dyed tissues of cotton, repeated washings with citric acid if the color is well dyed. Ditto of wool, same; weak muriatic acid if the wool is of the natural color. On silk, no remedy.

To Clean Satins.

Satins may be cleansed with a weak solution of borax or benzine when greasy. Care should be taken to sponge moderately and lengthwise, not across, the fabric; iron on the wrong side only. White, cream and pink satins may be treated in the same way as cream-colored silks.

To Clean Black.—Boil 3 lb. potatoes to a pulp in a quart of water; strain through a sieve, and brush the satin with it on a board or table. The satin must not be wrung, but folded down in cloths, for three hours, and then ironed on the wrong side.

Scouring Liquid.

M. LeClerc.

For scouring and removing grease from tissues of all kinds and worn clothes. To take out spots the liquid is used pure, but for general scouring it is mixed with 4 or 5 times its own quantity of water. In 22 gal. of hot water dissolve 15½ lb. white Marseilles soap; 1 3-10 lb. carbonate of potash; or 15 or 18 lb. soft soap. To the solution add extract of Panama, 1 1-10 lb. In another vessel mix ox or sheep gall, 15 qt., and ammounia at 22 degrees, 3 pt. Heat this mixture, skim it, let it cool, and then add alcohol at 90 degrees, 3 3-10 gal.; decant and filter. Take 1-3 part of the soap mixture and 2-3 part of the gall mixture, and add some aromatic essence.

Scouring Preparations for Removing Grease.

One ounce camphor dissolved in 3 oz. alcohol. Add 4 oz. essence of lemon.

Camphine, 8 oz.; alcohol, 1 oz.; sulphuric ether, 1 oz.; essence of lemon, 1 dram.

Alcohol, 8 oz.; white soap, 1½ oz.; oxgall, 1¼ oz.; essence of lemon, 1-8 to ¼ oz.

Scouring Paste.

Oxalic acid, 1 part; iron peroxide, 15 parts; powdered rotten stone, 20 parts; palm oil, 60 parts; petrolatum, 4 parts. Pulverize the oxalic acid and add rouge and rotten stone, mixing thoroughly, and sift to remove all grit; then add gradually the palm oil and petrolatum, incorporating thoroughly. Add oil of myrbane or oil of lavender to suit. By substituting your red ashes from stove coal, an inferior representative of the foregoing paste will be produced.

Removal of Stains and Grease Spots.

The following table gives at a glance the best means of cleansing all kinds of fabrics from any stain whatever.

KIND OF STAIN	FROM LINEN.	FROM COLORED GOODS.		FROM SILKS.
		COTTON.	WOOLEN.	
Sugar, glue, blood and albumen.	Simple washing with water.			
Grease.	Soapsuds, alkaline lyes.	Lukewarm soapsuds.	Soapsuds, ammonia	Benzine, ether, ammonia, potash, magnesia, chalk, yolk of egg.
Varnish and oil paints.	Turpentine, or benzine, and soap			Benzine, ether, soap; rub carefully.
Stearine.	Very strong alcohol, 95°.			
Vegetable colors, red wine, fruit, red ink.	Sulphur vapors; warm chlorine water.	Wash out with warm soapsuds or ammonia water.		The same; rub gently and carefully.
Alizarine ink.	Tartaric acid; the older the stain the stronger the solution.	Dilute tartaric acid if the stuff will bear it.		The same; with care.
Iron rust and ink made of galls.	Warm oxalic acid solution; dilute hydrochloric acid, then tin turnings.	Repeated washings with a solution of citric acid, if colors will bear it.	The same; dilute hydrochloric acid if the wool is dyed naturally.	Nothing can be done; and all attempts only make it worse.
Lime, lye or alkalies.	Simply wash with water.	Drop dilute nitric acid upon it. The stain previously moistened can be rubbed off with the finger.		
Tannin, green nut shells.	Javelle water, warm chlorine water; concentrated solution of tartaric acid.	Alternate washing with water and with more or less dilute chlorine water, according to the colors.		
Coal tar, wagon grease.	Soap, oil of turpentine, alternating with a stream of water.	Rub with lard, then soap it well. After a time wash alternately with water and turpentine.		The same; but use benzine instead of turpentine, and the water must fall on it from some height.
Acids.	Red acid stains are destroyed by ammonia, followed by thorough washing with water. Brown stains of nitric acid are permanent.			

With the above table, a few simple chemicals, and a good deal of care and perseverance, any one may set up a chemical cleaning establishment. Great pains must be taken when ether and benzine are employed to avoid their taking fire, the vapor of which when mixed with air is highly explosive. An open bottle of ether will take fire at a distance of several feet from an open flame, as a heavy invisible vapor issues from the bottle; when the vapor reaches the flame of a lamp the whole mass of vapor takes fire.—Muster Zeit.

Scouring Bricks.

Scouring brick may be made by mixing sand with a small percentage of clay and baking. The quantity and heat required may be easily ascertained by trial. Mucilage and gums may be used, but they are not equal to clay as a cement for scouring brick. A very small portion of Portland cement might be made available, to avoid the baking process.

To Clean Shawls.

White woolen shawls will not always stand washing successfully. A safe way to clean such an article is to brush all the dust out, spread it on a table, then sprinkle over it a quantity of finely ground white starch (rice or potato, not wheat); fold up the shawl into a square, powdering liberally between each fold. The shawl should be put away for several hours, and then be opened and dusted. The starch will have absorbed all the grease that may have been present and collected the dust. If such shawls are very dirty, they may be pressed between two damp blankets before the starch is put on. Gray and light blue woolen shawls may be treated in the same way, only using slightly blued starch instead of pure white starch. The shawls must be well shaken to get rid of the powder.

Laundrying of Shirts.

(Chinese Method.)

A rather thick starch paste is prepared by first beating up a handful of raw starch, usually corn starch, and a teaspoonful of fine rice flour, with about 1 quart of water, making a liquid of creamlike consistence. A certain quantity (determined alone by personal experience) is poured into a quantity of boiling water, while the latter is violently stirred with a short wooden spatula. With this the portions of the linen to be dressed are well smeared, the linen moist from wringing and the starch quite hot. Thus smeared the pieces are laid aside for a few minutes, then rubbed well between the hands, so that the paste is well distributed in the fabric. The linen is then usually dried by artificial heat. When ready for ironing, the starched portions are dampened by means of a cloth dipped in raw starch water, to which has been added a small quantity—about ½ an ounce to the quart of blood albumen—clarified serum of bullock's blood. The proportion of starch in this water is usually about as 1 to 50 of water. In ironing the irons are first made very hot, and cooled somewhat externally just before using by momentarily plunging them into a pail of water. The irons commonly employed are what are termed polishing irons—they have the posterior edge rounded instead of angular, as in the ordinary smoothing or sadiron. Much of the fine gloss observed on shirts laundried by Chinamen is accomplished by the skillful manipulation of this "rounded edge" over the work—a manipulation very difficult to describe in words. It is most laborious work for those not accustomed to it. It not only renders the surface glossy, but imparts easy flexibility to the heavily starched fabric otherwise not attainable. Custom made shirts are usually laundried before delivery in trade at the factory, the ironing in these cases being largely performed by steam mangles, though some are hand finished. The following recipe for a laundry starch is said to produce a very fine and lasting gloss on linen without the expenditure of the amount of labor in ironing usually requisite to produce a fair appearance:

Corn starch .....1 ounce.
Water, boiling .....1 7-8 pints.
Bluing .....q. s.

To this when it has cooled somewhat is added and thoroughly mixed in about half an ounce of the following preparation:

Gum arabic ..... 8 3-5 parts.
Sugar, loaf ..... 2½ parts.
Soap, white curd ..... ¼ part.
Water glass ("A" syrup). 1 part.
Egg albumen..... 4 parts
Water, warm .....20 parts.

In preparing this the first three ingredients are dissolved together in the water at boiling heat, the water glass is then added, and when the mixture has cooled down to about 150 degrees Fah. the egg albumen is put in and the whole well beaten together.

Laundrying of Shirts.

Starch .....1 ounce.
Paraffin .....3 drams (about).
White Sugar .....1 tablespoonful.
Table salt .....1 tablespoonful.
Water .....q. s.

Rub up the starch with soft water into a thick smooth paste. Add nearly or quite a pint of boiling water, with the salt and sugar dissolved in it, and, having dropped in the paraffin, boil for at least half an hour, stirring to prevent burning. Strain the starch and use while hot. Sufficient bluing may be added to the water, previous to the boiling, to overcome the yellowish cast of the starch, if necessary. Spermaceti may be used in place of paraffin. Starched linen can only be properly finished by hard pressure applied to the iron.

Glossed Shirt Bosoms. A

Take 2 ounces of fine white gum arabic powder, put it in a pitcher and pour on a pint or more of water, and then, having covered it, let it stand all night. In the morning, pour it carefully from the dregs into a clean bottle, cork, and keep it for use. A teaspoonful of gum water stirred in a pint of starch, made in the usual way, will give to lawns, white or printed, a look of newness, when nothing else can restore them, after they have been washed.

Glossed Shirt Bosoms. B

Melt 2½ pounds of the very best paraffin wax over a slow fire. When liquefied remove from the fire and stir in 100 drops oil of citronella. Have some new round pie tins; place them on a level table, coat them slightly with sweet oil, and pour about six tablespoonfuls of the enamel into each tin. The pan may be floated in water to cool the contents sufficiently to permit the mixture to be cut or stamped out with a tin cutter into small cakes about the size of a peppermint lozenge. Two of these cakes added to each pint of starch will cause the smoothing iron to impart the finest possible finish to muslin or linen, besides perfuming the clothes.

Glossed Shirt Bosoms. C

Take of white wax, 1 ounce; spermaceti, 2 ounces; melt them together with a gentle heat. When you have prepared a sufficient amount of starch, in the usual way, for a dozen pieces, put into it a piece of the polish about the size of a large pea; using more or less, according to large or small washings. Or thick gum solution (made by pouring boiling water upon gum arabic) may be used. One tablespoonful to a pint of starch gives clothes a beautiful gloss.

To Clean Shoes.

Defaced kid boots will be greatly improved by being rubbed well with a mixture of cream and ink.

To Clean White Satin Shoes.

Put in the shoe something which will fill it out. Then rub the shoe gently with a piece of muslin dipped in spirits of wine. Do this several times. Then wipe the shoe carefully with a piece of dry muslin.

To Clean Show Windows.

A good cleaning powder for show windows and mirrors is prepared by moistening calcined magnesia with pure benzine, so that a mass is formed sufficiently moist to let a drop form when pressed. The mixture has to be preserved in glass bottles with ground stoppers, in order to retain the easily volatile benzine. A little of the mixture is placed on a wad of cotton and applied to the glass plate. Do not use near a fire or light, as the benzine vapor is very inflammable and explosive.

Silk Cleaner.

Soft soap	½ pound.
Brandy	2 teaspoonfuls.
Proof spirit	1 pint.
Water	1 pint.

Mix well together.

Apply with a sponge on each side of the silk, taking care not to crease the silk. Rinse 2 or 3 times and iron on the wrong side, putting a piece of thin muslin between the silk and the iron.

To Clean Silk.

No silks look well after washing, no matter how carefully it may be done, and, therefore, it should never be resorted to without absolute necessity. It is recommended to sponge faded silks with warm water and soap, and then to rub them with a dry cloth on a flat board, after which, to iron them on the inside with a smoothing iron. Sponging a little with spirits will also improve old black silks. The ironing may be done on the right side, with thin paper spread over them to prevent glazing.

To Clean White Silk.

White silk is best cleaned by dissolving curd soap in water as hot as the hand can bear, and passing the silk through and through, handling it gently, and rubbing any spots till they disappear. The silk should then be rinsed in lukewarm water, and stretched by pins to dry.

To Clean Black Silk.

To bullock's gall add boiling water sufficient to make it warm, and with a clean sponge rub the silk well on both sides; squeeze it well out, and proceed in like manner. Rinse it in spring water, and change the water until perfectly clean. Dry it in the air, and pin it out on a table; but first dip the sponge in glue water, and rub it on the wrong side; then dry before a fire.

To Renovate Black Silk.

The French process is to use a weak solution of coffee water. Do not wet the silk too much, and restore the luster by careful rubbing with a soft silk handkerchief. White silks can be cleaned with a dry powder formed of fine starch and a little laundry blue.

Rub over the tissue and dust out thoroughly. Bread crumbs or chalk should be used for pink or cream colored silks. Silks may be ironed on the wrong side with a moderately hot iron, or on the right side (to give the fine luster) if well protected by two folds of slightly damped muslin.

To Clean Silver. A

Silver articles discolored by sulphureted hydrogen may be cleaned by rubbing them with a boiling saturated solution of borax. Another good preparation is a solution of caustic potash with some bits of metallic zinc.

To Clean Silver. B

Silver which has become much tarnished may be restored by immersion in a warm solution of 1 part cyanide of potassium to 8 parts of water. (This mixture is extremely poisonous.) Washing well with water, and drying, will produce a somewhat dead-white appearance, which may be quickly changed to a brilliant luster by polishing with a soft leather and rouge.

To Clean Silver. C

Wash in hot soapsuds (use the silver soap if convenient); then clean with a paste of whiting and whisky. Polish with buckskin. If silver was always washed in hot suds, rinsed well, and wiped dry, it would seldom need anything else.

To Clean Silver. D

A fresh concentrated solution of hyposulphite of soda will dissolve at once the coat of sulphide of silver, which is the cause of the blackness produced by mustard, eggs, etc., or anything containing sulphur.

To Clean Silver E

Add gradually 8 ounces of prepared chalk to a mixture of 2 ounces of spirits of turpentine, 1 ounce of alcohol, ½ ounce of spirits of camphor, and 2 drams of aqua ammonia. Apply with a soft sponge, and allow it to dry before polishing.

Silver Cleaning Compound. A

Ammonium carbonate .... 1 ounce.
Water ..... 4 ounces.
Paris white .....16 ounces.

Mix well, and apply by means of soft leather.

Silver Cleaning Compound. B

Rouge (very fine- and prepared chalk, equal parts; use dry.

Silver Cleaning Compound. C

Whiting (fine) .....2 parts.
White oxide of tin .....1 part.
Calcined hartshorn .....1 part.

To Remove Yellow Coating from Silver Spoons.

Dissolve 1 ounce cyanide of potassium in 1 quart of soft water and you will have a dip in which you can wash your spoons and instantly remove the sulphide of silver. The solution must be kept in a bottle that is tightly corked and labeled "poison."

Egg spoons get tarnished by the sulphur in the egg uniting with the silver. This tarnish is a sulphuret of silver, and may be removed by rubbing with wet salt or ammonia.

It may be exposed to uniform heat, and then boiled in strong alum water.

To Remove Ink Stains from Silver.

Make a paste of chloride of lime and water and rub upon the stains.

To Restore the Color of Filigree Silver Jewelry.

How can the original white color of silver filigree jewelry be restored when tarnished by wear or shop worn? A. First wash the articles in a solution of 1 fluid ounce of liquid potassa in 20 of water, rinse and then immerse in a mixture of salt, 1part; alum, 1 part; saltpeter, 2 parts; dissolved in 4 parts water. Let them remain for five minutes; wash in cold water and dry with chamois leather.

To Prepare and Bleach Skeletons.

It is impossible to extract the oily material from the bones except by a very slow process. Boiling in any amount of alkali, say washing soda, will not accomplish it, and all the oil must be absolutely removed before you can do anything toward the bleaching. Very long maceration in water alone or in soda and water will eventually effect it, but a much better material is benzine. Make a tin box into which you pack your skeleton, solder on the cover, leaving only a round hole for filling. Pour in benzine till the box is filled, stop the hole closely, and leave it undisturbed for three months. The skeleton will come out clean, and can be bleached perfectly by sunlight. Chlorine will do the bleaching quicker, but it injures the bones; never use it. Any shorter process will give you a skeleton that is always nasty.

To Remove Silver Nitrate Stains.

In the manipulation of the nitrate of silver bath solutions in photography, the operator frequently receives stains of the salt upon his clothing, which are not very attractive in appearance. Stains or marks of any kind made with the above silver solution or bath solution may be promptly removed from the clothing by simply wetting the stains or mark with a solution of bichromate of mercury. The chemical result is the change of the black-looking nitrate of silver into chromate of silver, which is whiter or invisible on the cloth. Bichromate of mercury can be obtained at the drug stores.

Sodium sulphite ..... 1 ounce.
Chloride of lime .....½ ounce.
Water ..... 2 ounces.
Mix.
Use a nail brush.

Dip the fingers into a strong solution of cupric chloride. In about a minute the silver will be converted into a chloride, and may then be washed off with hyposulphate of soda solution.

The immediate and repeated application of a very weak solution of cyanide of potassium accompanied by thorough rinsings in clean water) will generally remove these without injury to the colors.

How to Remove Nitrate of Silver Stains from the Fingers—Paint the blackened parts with tincture of iodine; let remain until the black becomes white. The skin will then be red, but by applying ammonia the iodine will be bleached, leaving white instead of black stains of nitrate of silver.

Nitrate of silver stains may be removed by rubbing them with a weak solution of sulphydrate of ammonium or strong solution of iodide of potassium.

Soap for Removing Stains.

Take 22 pounds of the best white soap and reduce it to thin shavings. Place it in a boiler, together with water, 8.8 pounds; oxgall, 18.25 pounds.

Cover up and allow to remain at rest all night. In the morning heat up gently and regulate it so that the soap may dissolve without stirring. When the whole is homogenous and flows smoothly, part of the water having been vaporized, add turpentine, 0.55 pounds; benzine, best clear, 0.44 pounds; and mix well. While still in the state of fusion color with green ultramarine and ammonia, pour into moulds and stand for a few days before using. The product will be found to act admirably, and the yield Teinture.

To Clean Sponges.

"In a large basin mix about a pint of water and 2 tablespoonfuls of sulphuric acid (common oil of vitriol), then steep the sponge about two hours, wring it out several times in the acid, and finally well wash out the acid in clean water it was then just like new, having regained its former size, color and elasticity, with not the slightest trace of its former sliminess. It was a large bath sponge, and in an extremely bad condition."—English Mechanic.

To Remove Spots and Stains.

Taking out grease and other spots from clothes is an application of chemistry which has a practical interest for everybody. It demands a certain acquaintance with solvents and reagents, even though we may not understand the laws of chemical affinity on which their action depends. The general principle is the applying to the spot a substance which has a stronger affinity for the matter composing it than this has for cloth, and which shall render it soluble in some liquid, so that it can be washed out. At the same time it must be something that will not injure the texture of the fabric or change its color. The practical hints we shall give are condensed from a variety of foreign sources.

The best substances for removing grease or oil are: 1. Benzine. 2. Soap. 3. Chalk, fuller's earth, steatite, or "French chalk." These should be merely diffused through a little water to form a thin paste, which is spread upon the spot, allowed to dry, and then brush out. 4. Oxgall, and yolk of egg which have the property of dissolving fatty bodies without affecting perceptibly the texture or colors of cloth. The oxgall should be purified to prevent its greenish tint from degrading the brilliancy of dyed stuffs or the purity of whites. Thus prepared it is the most effective of all substances known for removing this kind of stains, especially from woolen cloths. It is to be diffused through its own bulk of water, applied to the spots, rubbed well into them with the hands till they disappear, after which the stuff is to be washed with soft water. 5. The volatile oil of turpentine. This will take out only recent stains; for which purpose it ought to be previously purified by distillation over quicklime.

The following recipes deal especially with the garment dyer: 1. Steam has the property of softening fatty matters, and thus facilitating their removal by reagents.

2. Sulphuric acid may be employed in certain cases, especially to brighten and raise greens, reds and yellows; but it must be diluted with at least 100 times its weight of water and more, according to the delicacy of the shades.

3. Muriatic acid is used with success for removing spots of ink and iron mould upon a great number of colors which it does not sensibly affect.

4. Sulphurous acid is only used for bleaching undyed goods, straw hats, etc., and for removing fruit stains upon white woolen and silk tissues. The fumes of burning sulphur are also employed for this object, but the liquid acid (or a solution of the bisulphite—not bisulphate— of soda or magnesia) is safer.

5. Oxalic acid serves for removing spots of ink and iron and the residues of mud spots, which do not yield to other cleansing agents. It may also be employed for destroying the stains of fruit and of astringent juices, and stains of urine which have become old upon any tissue. Nevertheless, it is best confined to undyed goods, as it attacks not merely fugitive colors, but certain of the lighter fast colors. The best method of applying it is to dissolve it in cold or lukewarm water, and to let a little of the solution remain upon the spot before rubbing it with the hands.

6. Citric acid serves to revive and raise certain colors, especially greens and yellows; it destroys the effect of alkalies and any bluish or crimson spots which appear upon scarlets. In its stead acetic acid may be employed.

7. Liquid ammonia is the most energetic and useful agent employed for cleansing tissues and silk hats, and for quickly neutralizing the effects of acids. In the later case it is often sufficient to expose the goods to the fumes of this alkali in order to remove such spots entirely. Ammonia gives a violet cast to all shades produced with cochineal, lac, the redwoods or logwood, and all colors topped with cochineal. It does not deteriorate silks, but at elevated temperatures it perceptibly attacks woolens. It serves to restore the black upon silks damaged by damp.

8. The carbonate of soda (soda crystals) serves equally in most of the cases where ammonia is employed. It is good for hats affected by sweat.

9. Soda and potash only serve for white goods, of linen, hemp, or cotton; for these alkalies attack colors and injure the tenacity and suppleness of woolen and silk. For the same reason white soap is only to be recommended for cleaning white woolen tissues.

10. Mottled soaps serve for cleaning heavy stuffs of woolen or cotton, such as quilts; for such articles which do not require great suppleness or softness of feel the action of the soap may be enhanced by the addition of a small quantity of potash.

11. Soft potash soaps may be usefully employed in solution, along with gum arabic or other mucilaginous matters, for cleaning dyed goods, and especially self-colored silks. This composition is preferable to white or marbled soaps, as it removes the spots better and attacks the colors much less.

12. Oxgall, which can be obtained from the butchers in a sort of membraneous bag (the so-called gall bladder), has the property of dissolving the majority of fatty bodies without injuring either the color or the fiber. It may be used preferably to soap for cleaning woolens; but it should not be employed for cleaning stuffs of light and delicate colors, which it may spoil by giving them a greenish yellow, or even a deep green tint. It is mixed also with other matters, such as oil of turpentine, alcohol, honey, yelk of egg, clay (fuller's earth), etc., and in this state is used for cleaning silks.

13. To obtain a satisfactory result gall ought to be very fresh. To preserve it a simple method is to tie the neck of the gall bladder well with a string, and hold the bladder in boiling water for some time. This being

done, it is taken out and let dry in the shade.

14. Yelk of egg possesses nearly the same properties as oxgall, but is much more costly. It must be used as quickly as possible, for it loses its efficiency with keeping. It is sometimes mixed with an equal bulk of oil of turpentine.—Moniteur de la Teinture.

To Remove Spots Made by Stearin Sperm Candles.

1. For all kinds use 95 per cent alcohol.

2. Scrape off as much as possible with a knife, then lay a thin, soft white blotting paper upon the spots and press with a warm iron. By repeating this the spermaceti will be drawn out. Afterward, rub the cloth where the spots have been with some very soft, brownish paper.

To Clean Stones.

To remove grease from stone steps or passages, pour strong soda and water boiling hot over the spot, lay on it a little fuller's earth made into a thin paste with boiling water, let it remain all night, and if the grease be not removed, repeat the process. Grease may sometimes be taken out by rubbing the spot with a hard stone not hearthstone—using sand and very hot water, with soap and soda.

Spots of Sugar, Glue, Blood, Albumen.

On white goods, on dyed tissues of cotton and wool, and on silk, simple washing with water.

To Cleanse and Bleach Tallow.

Dissolve 1 pound of alum in 2 gallons of water; the water should be boiling. Now add 20 pounds of tallow and continue to boil for about an hour, skimming frequently. Strain through stout muslin and allow it to harden.

Jackman's Washing Compound.

Six pounds sal soda, 1 pound borax, dissolve in 1 gallon boiling water. cold, add 1-3 pound potassium carbonate, 3 ounces liquid ammonia, 4 spoonfuls alcohol. Boil for five minutes ¾ pound fresh, unslaked lime in 1 gallon water. Draw off the clear fluid when thoroughly settled. Add to this the other ingredients with 9 gallons cold water.

Directions for using: Soak the clothes over night, after rubbing soft soap on the dirty places. In the morning add ½ pint of the compound, ½ pint soft soap, and 4 gallons hot water. Boil not more than five minutes, and turn into a tub, putting into your boiler the same mixture as before. Wring the clothes into this and boil again ten minutes, suds, blue, and hang them out to dry. Should the wristbands or parts that are very dirty need a little rubbing, it should be done while the mixture is boiling.

Wash Mixture. A

Wash Mixture.—Take 5 pounds bar soap, shave fine, add 1 quart lye, ¼ ounce pearlash, dissolved over a slow fire. When dissolved, put into a vessel prepared for it to stand in; then add ¼ pint turpentine, 1 gill hartshorn; stir well, and it is ready for use.

Wash Mixture. B

Dissolve ½ pound soda in 1 gallon boiling water, and pour upon it ¼ pound lime. After this has settled, cut up 10 ounces of common bar soap, and strain the solution upon it and

mix perfectly. Great care must be taken that no particles of lime are poured upon the soap. Prepare the mixture the evening before washing.

Directions: To 10 gallons water add the above preparation when the water is boiling. Each lot of linen must boil half an hour, and the same liquid will answer for three batches of clothes. The white clothes must be put in soak over night, and if the collars and wristbands are soaped and rubbed slightly, so much the better. Clean cold water may be used for rinsing. Some prefer boiling them for a few moments in clean bluing water, and afterward rinse in cold water.

Wash Mixture. C

The following compound is said greatly to facilitate the washing of clothes: Dissolve 2 pounds bar soap in about 3 gallons of water as hot as the hand can bear. Add 1 tablespoonful of turpentine and 3 of ammonia. Stir, and steep the clothes in this for three hours, keeping the vessel tightly covered. Then wash the clothes in the usual way. The soap and water may be used a second time, in which case a teaspoonful of turpentine and the same amount of ammonia must be added. This treatment is calculated to save much labor in cleansing summer clothes stained by fruit, etc.

Wash Mixture. D

The German washerwomen use a mixture of 2 ounces turpentine and 1 ounce spirits of ammonia well mixed together. This is put into a bucket of warm water in which one-half pound soap has been dissolved. The clothes are immersed for twenty-four hours and then washed. The cleansing is said to be greatly quickened, and two or three rinsings in cold water remove the turpentine smell.

Wash Mixture E

Borax is valuable for laundry use, instead of soda. Add a handful of it, powdered, to about 10 gallons of boiling water, and you need use only half the ordinary allowance of soap. For laces, cambrics, etc., use an extra quantity of the powder. It will not injure the texture of the cloth in the least.

Washing Powders.

Hager, in Phar. Centralhalle, gives the following analyses:

1. The so-called English Washing Crystal is an impure, half efflorescent crystallized soda, containing a large proportion of sulphate of soda and common salt.

Crystals simply a filtered solution of borax and soda has been introduced.

Crystal Washing Powder is a half efflorescent soda, containing about 25 per cent of Glauber's salts.

4. The Washing and Cleansing Crystals (Harper Twelvetrees & Sons), are pure crystallized soda, with 1 to 2 per cent of borax.

5. Krimmelbein's Wool Washing Composition is a mixture of 35 parts of dried soda, 10 parts of soap powder, and 10 parts of sal ammoniac.

6. Ward's Wool Washer is a mixture of 90 parts of effloresced soda crystals with 10 parts of soap powder.

7. The Universal Washing Powder (Henkel's) is a water glass containing soda, with a small percentage of tallow soap and starch powder.

8. Hudson's Soap Extract is a mixture of crystallized soda and soda soap, containing water (soap 14.3, anhydrous soda 30, and water 55).

9. A washing powder for the finest white linen is a powdery mixture of 90

parts of effloresced soda with 10 parts of hyposulphite of soda and 2 parts of borax.

10. The so-called Finest Brilliant Elastic Starch is a mixture of about 7 to 8 parts of stearine, with 100 parts of wheaten starch (melted stearine is mixed with about fifteen times its weight of starch, and after cooling powdered and combined with the rest of the starch).

11. The Berlin Prepared Brilliant Dressing Starch is good wheaten starch, mixed with 2 to 2½ per cent of borax.

Benzine Jelly.

White castile soap.....12 parts.
Ammonia water ..... 4 parts.
Benzine .....65 parts.
Water .....20 parts.

Dissolve the soap in the water by the aid of heat, remove from the fire and add the ammonia water; stir until nearly ready to set, and then incorporate the benzine.

Kid-Reviving Cream

White wax ..... 2 parts.
Tallow ..... 1 part.
Linseed oil ..... 2 parts.
Turpentine ..... 4 parts.
Curd-soap ..... 1 part.
Water to .....20 parts.

Dissolve the soap in the water with the aid of heat, mix and dissolve other ingredients; then add gradually, while warm, the soap solution, so as to form a thickish cream; add any cheap essential oil.

The above, colored with any suitable aniline dye, or with fine lampblack and a trace of indigo, will give a suitable polish.

General Cleaning Powder.

Soft soap ..... 8 ounces.
Washing soda ..... 4 ounces.
Borax ..... 1 ounce.
Strong solution of ammonia.10 ounces.
Methylated spirit ..... 2 ounces.
Water to ..... 1 gallon.

Add any cheap essential oil to the spirit before mixing with the ammonia and solution of soap, etc., in the water.

Bijou Cleaning Fluid.

Ether ..... 1 dram.
Chloroform ..... 1 dram.
Alcohol ..... 2 drams.
Methyl. salicylate .....½ dram.
Deodorized benzine, to ....32 ounces.

Directions same as benzine.

Deodorized Benzine.

Benzine ..... 1 gallon.
Conc. sulphuric acid .....½ pound.

Let stand a few days, shaking cautiously, pour off benzine and to it add 4 ounces dried slaked lime; shake this up in it occasionally for twelve hours, decant and bottle; or deodorize by shaking with a small quantity of plumbate of sodium which can be made by dissolving freshly precipitated oxide of lead in caustic soda.

Gloss for Starch. A

French chalk .....3 ounces
Powdered white soap .....1 ounce.

Directions: Take a piece of new dry flannel and dip it into the glaze-powder, rub it well over the right side of the starched article, then proceed to iron in the usual way, when a beautiful gloss will be obtained. Put in a little borax in making the starch to give stiffness as usual.

Gloss for Starch. B

Powdered borax .....1 dram.
Powdered spermaceti.....1 dram.
Powdered French chalk ....6 drams.
Mix and sift.

Labarraque's Solution of Soda.

Sal soda ..... 4 pounds.
Chlor. lime .....½ pound.
Water ..... 1 gallon.

Dissolve the sal soda in a vessel in 1 gallon boiling water; let it boil for 10 or 15 minutes, then add the chloride lime; let settle and decant.

Soap and Soap Making.

On the manufacture of soap in small quantities without boiling, Mr. W. J. Menzies, in the course of a paper on the above subject, printed in the Chemist and Druggist of August4, gives the following practical recipe:

Take exactly 10 pounds of double refined 98 per cent caustic soda powder (Greenback), put it in any can or jar with 45 pounds of water, stir it once or twice, when it will dissolve immediately and become quite hot; let it stand until the lye thus made is cold. Weigh out and place in any convenient vessel for mixing, exactly 75 pounds of clean grease, tallow, or oil (not mineral oil). If grease or tallow be used, melt it slowly over the fire until it is liquid and just warm—say, temperature not over 100 degrees F. If oil be used, no heating is required. Pour the lye slowly into the melted grease or oil in a small stream continuously, at the same time stirring with a flat wooden stirrer about three inches broad; continue gently stirring until the lye and grease are thoroughly combined and in appearance like honey. Do not stir too long, or the mixture will separate itself again, the time required varies somewhat with the weather and the kind of tallow, grease or oil used; from 15 to 20 minutes will be enough When the mixing is completed, pour off the liquid soap into any old square box for a mould sufficiently large to hold it, previously dampening the sides with water so as to prevent the soap sticking. Wrap up the box well with old blankets, or, better still, put it in a warm place until the next day, when the box will contain a block of 130 pounds of soap, which can afterward be cut up with a wire. Remember the chief points in the above directions, which must be exactly followed. The lye must be allowed to cool. If melted tallow or grease be used, it must not be more than warm. The exact weights of double refined 98 per cent powdered caustic soda and tallow or oil must be taken; also the lye must be stirred into the grease, not grease or oil added to the lye. If the grease or tallow used be not clean or contains salt it must be rendered, or purified, previous to use, that is to say, boiled with water, and allowed to become hard again to throw out the impurities. Any salt present will spoil the whole operation entirely, but discolored or rancid grease or tallow is just as good as fresh for soap making purposes.

If the soap turn out streaky and uneven it has not been thoroughly mixed. If very sharp to the taste too much soda has been taken. If soft, mild and greasy, too little soda has been used. In either case it must now be thrown into a pan and brought to a boil with a little more water. In the first case boiling is all that is necessary; in the other instances a very little oil or a very little more of the double refined powdered caustic soda must be added to the water. These things will never happen, however, if the directions are exactly followed, and after the soap has been

made several times with the experience thus gained the process is extremely easy and the result will be always a good batch of soap. Beef tallow makes the hardest soap, mutton fat a rather softer soap; of oils, cotton seed is the cheapest and best, but the soap is much softer, lathering very freely indeed. Ordinary household fat or dripping will make a nice soap and in many places can be obtained at a very trifling cost, and in exchange for goods sold. Such grease, however, must be carefully examined for salt, which it often contains. It will be evident that any smaller quantity of soap can be made at a time, according to the above directions, by taking the ingredients in exact proportion. It is not advisable to make more than double the quantity prescribed, as it is difficult to work more by hand. By making successive batches, however, a single person can make two tons of soap in a day simply with apparatus(pans,etc.), obtainable in any household.

By adding a few drops of essential oil just when the mixing is completed a toilet soap is produced. Oil of mirbane (artificial almond oil) is the cheapest, but the perfume is not nearly so pleasant as real almond oil, citronella or oil of cloves. If made with clean grease or tallow or light colored oil, the soap produced is quite white.

Sometimes a little coloring matter will make the soap sell better, although of no better quality. Half an ounce of bichromate of potash ash dissolved in the lye will give a green; 1 pound palm oil melted with the tallow or oil, a yellow color; or a good brown can be got by burning ½ pound of sugar in a saucepan until black, then dissolving it in a pint of water, and adding it to the melted tallow before mixing.

A very cheap and good jelly soft soap can be made with the above soap. Take 5 pounds of the hard soap, crush it down or cut it up into as small pieces as possible; put this into a pan or boiler with 10 gallons of water if a strong hard tallow soap; if an oily soap only half the quantity of water (five gallons); just bring it to a boil, and stir well, to thoroughly dissolve all the pieces of hard soap; pour or ladle it into any can, tub or barrel that is tight, and leave it to cool for two or three days. This will give about 80 pounds of jelly soft soap, at an exceedingly small cost. Of course, if made from colored and scented hard soap it will be a colored and scented jelly soap. This is a good way of working up the scraps and bits of soap after cutting up. It can be sold with a good profit at a very low figure and often as a substitute for regular soft soap. It is a very different article, however, to a real potash soft soap, which should invariably be used for washing woolens. It is possible to produce this real potash soft soap in the cold by a somewhat similar process to the above.

AROMATIC WATERS.

Aqua Anethi.

Dill Water.

Oil of dill .....15 minims.
Absorbent cotton .....30 grains.
Distilled water q. s. to make ..... 1 pint.

Drop the oil on the cotton, pick and pack in a percolator or small glass funnel; run the distilled water through slowly until 1 pint is obtained.

Aqua Anisi.

(Anise Water.)

Oil of anise star .....15 minims.

Absorbent cotton .....30 grains.
Distilled water q. s. to
make ..... 1 pint.

Drop the oil on the cotton, pick and pack in a percolator or small glass funnel, run the distilled water through slowly until 1 pint is obtained.

Aqua Aurantii Flor.

(Orange Flower Water.)

Oil of neroli petale .....20 minims.
Absorbent cotton .....30 grains.
Distilled water q. s. to
make ..... 1 pint.

Drop the oil on the cotton, pick and pack in a percolator or small glass funnel; run the distilled water through slowly until 1 pint is obtained.

Aqua Camphorae.

(Camphor Water.)

Gum camphor .....1 dram.
Alcohol, 188 per cent .....2 drams
Absorbent cotton.....1 dram.
Distilled water q. s. to
make .....1 pint.

Dissolve the camphor in the alcohol drop the solution on the cotton, pick and pack in a percolator or small glass funnel; run the water through slowly until 1 pint is obtained.

Aqua Carui.

(Caraway Water.)

Oil of caraway .....15 minims.
Absorbent cotton .....30 grains.
Distilled water q. s. to
make ..... 1 pint

Proceed as directed for aqua aurantii.

Aqua Chloroformi.

(Chloroform Water.)

Chloroform ..... 1 fl. dram.
Distilled water .....25 ounces.

Put them into a two-pint stoppered bottle and shake them together until the chloroform is entirely dissolved.

Aqua Cinnamomi.

(Cinnamon Water.)

Oil of cinnamon .....15 minims.
Absorbent cotton .....30 grains.
Distilled water q. s. to
make ..... 1 pint.

Proceed as directed for aqua aurantii.

Aqua Creasoti.

(Creasote Water.)

Creasote .....72 minims
Distilled water q. s. to
make ..... 1 pint.

Proceed as directed for aqua chloroformi.

Aqua Foeniculi.

(Fennel Water.)

Oil of fennel .....15 minims.
Absorbent cotton .....30 grains.
Distilled water q. s. to
make ..... 1 pint.

Proceed as directed for aqua cinnamomi.

Aqua Lauro-Cerasi.

(Cherry Laurel Water.)

Oil of bitter almonds, essential .....20 minims.
Alcohol ..... 2 drams.
Absorbent cotton .....60 grains.
Distilled water q. s. to
make ..... 1 pint.

Proceed as directed for aqua camphora.

Aqua Menthae Pip.

(Peppermint Water.)

Oil of peppermint .....15 minims.
Absorbent cotton .....30 grains.
Distilled water q. s. to
make ..... 1 pint.
Proceed as directed for aqua aurantii.

Aqua Menthae Virid.

(Spearmint Water.)

Oil of spearmint .....15 minims.
Absorbent cotton .....30 grains.
Distilled water q. s. to
make ..... 1 pint.
Proceed as directed for aqua aurantii.

Aqua Pimentae.

(Pimento Water.)

Oil of allspice .....15 minims.
Absorbent cotton .....30 grains.
Distilled water q. s. to
make ..... 1 pint.
Proceed as directed for aqua aurantii.

Aqua Rosae.

(Rose Water.)

Oil of rose ..... 5 drops.
Absorbent cotton .....15 grains.
Distilled water q. s. to
make ..... 1 pint.
Proceed as directed for aqua aurantii, and run through the warm water; the latter should have a temperature of about 120 degrees F.

Wine of Aloes.

U. S. P.

Purified aloes ..... 1 ounce.
Cardamom .....75 grains.
Ginger .....75 grains.
Alcohol .....q. s.
White wine .....q. s.

Mix the three drugs, reduce to coarse powder, add 2 fluid ounces of alcohol and 14 of wine; macerate for 7 days, agitating occasionally, and filter; add through the filter enough of a mixture of one part of alcohol to 7 of wine by volume to make the filtrate measure 16 fluid ounces.

On the preparation of Hydrobromic and Hydriodic Acids.

By J. H. Kastle and J. H. Bullock.

It is doubtful if any of the methods proposed for the preparation of these two acids have ever come into general use. That such is the case is shown by the fact that the whole treatment of the chemistry of these two acids is quite brief in even the better text-books and treatises on chemistry. And yet it is just by the aid of these compounds that the greatest knowledge can be gained concerning the chemistry of the halogen family, and it is through the study of these hydrogen compounds that we can make the most satisfactory comparison of chlorine, bromine and iodine. If, for example, it can actually be shown the student, in the case of hydrochloric and hydriodic acids, that both of these substances are heavy, colorless gases, which fume in the air, have powerful acid odors and dissolve in water with great readiness, forming strongly acid solutions, one of which remains unaltered under ordinary conditions—the other changing; and, further, that one of these compounds cannot be decomposed by heat alone, whereas the other can with the greatest ease; that one is readily attacked by oxidizing agents, the other not—if these phenomena can actually be brought before the student, it is more than likely that he will have some clear conceptions as to

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the real resemblances and differences existing between chlorine and iodine. On the other hand, if he is shown a great deal about hydrochloric acid and little or nothing about the corresponding iodine compound, as is usually the case, he will probably quit the subject with no clear conceptions as to the nature of the latter compound, and in some instances he may even be troubled with doubts as to its existence. And, further, if attractive and brilliant experiments are possible at all they are possible with just such unstable compounds as these.

Realizing the importance of having the unstable halogen acids at their disposal, chemists have made quite a number of attempts to devise satisfactory methods for their preparation. Of the many methods which have been proposed for the preparation of hydrobromic acid two are certainly worthy of notice as yielding good results. One of these, described by Erdmann, consists in bringing bromine slowly into benzine containg a little ferrous bromide, and purifying the resulting hydrobromic acid gas by passing it through a tube containing ferric bromide and finally, through one containing anthracene. The other method, that of Champion and Pellet, consists in leading bromine into paraffin heated to 185 degrees C.

It is believed, however, that the method herein proposed for making hydrobromic acid is simpler and better than either of the above, for these reasons: First, the materials used are easy to obtain; second, no brominating agent is necessary, and third, the formation of the hydrobromic acid gas proceeds regularly, smoothly and rapidly without the aid of heat, and with little or no attention after the flow of bromine has once been regulated.

Of the methods proposed for the preparation of hydriodic acid, that involving the use of red phosphorus, iodine and water seems to have come into most general use. The objection to this method is that, unless great precautions are taken in the beginning, explosions are liable to occur. Hence, it is believed that the method here recommended for the preparation of this acid has advantages over the old method involving the use of red phosphorus, for the reason that no precautions whatever need be taken in preparing the acid rapidly by the process here described.

Preparation of Hydrobromic Acid.

The method here proposed for the preparation of this acid takes advantage of the reaction between bromine and naphthalene. Any one who has ever had occasion to bring these two substances together has doubtless remarked the great ease with which they react upon each other. When brought together even at ordinary temperatures torrents of hydrobromic acid are evolved. Therefore it occurred to one of us (Kastle) that this reaction might be employed in the preparation of hydrobromic acid. Such, indeed, has proven to be the case, the mode of procedure being as follows: About 15 to 20 grams of naphthalene are dissolved in a small quantity of orthoxyiene and the solution placed in a Florence flask of one-half to one liter capacity. The flask is connected, by means of a bent glass tube, with a double-neck Woulff's bottle, which is partially filled with a solution of concentrated hydrobromic acid, holding a small quantity of red phosphorus in suspension, and in turn is connected with a U-tube containing red phosphorus and one or more drying tubes partly filled with phosphorus pentoxide. Attached to the farther end of the drying tubes is a tube for the de-

livery of the dry hydrobromic acid gas. The bromine is introduced into the solution of naphthalene in the flask by means of a tap-funnel, the end of which dips beneath the surface of the liquid. On allowing the bromine to flow slowly into the solution of the naphthalene action takes place at once and hydrobromic acid is rapidly evolved. By passing the gas through the concentrated aqueous hydrobromic acid containing red phosphorus in suspension it is deprived of any free bromine that may pass over along with it (which, by the way, is never present in any considerable quantity), so that, after passing through the U-tube containing dry red phosphorus and the drying tubes, it is obtained as a perfectly colorless gas. With this simple apparatus, and working with the quantities given in the above, the acid can be prepared quite as rapidly as hydrochloric acid can be prepared from sulphuric acid and salt, and with no more trouble or attention for the reason that, if the flow of bromine into the solution of the naphthalene be once properly regulated, the formation of the acid proceeds regularly and automatically. In order to obviate the use of xylene, which is not always easily obtained, some experiments were tried in which kerosene boiling above 150 degrees C. was used as a solvent for the naphthalene. It was found to work just as satisfactorily as the purest orthoxylene. And, lastly, to put the method entirely within the reach of all lecturers upon chemistry, some experiments were tried with moth balls, which were found to consist almost ,if not entirely, of naphthalene, in the place of the pure naphthalene. This preparation, viz., the moth balls, was found to serve the purpose quite well as the purest naphthalene, as will be seen from the following results:

I.—50 grams of bromine, with 15 grams of naphthalene, dissolved in 50 cc. of orthoxylene, gave 21 grams of hydrobromic acid. Theory—26 grams of HBr.

II.—90 grams of bromine, with 15 grams of naphthalene, dissolved in 50 cc. xylene, gave 33 grams of hydrobromic acid. Theory—46 grams.

III.—105 grams of bromine, with 12.8 grams of naphthalene, dissolved in 20 grams of xylene, gave 40.5 grams of hydrobromic acid. Theory — 53.5 grams HBr.

IV.—95 grams of bromine, with 12 grams of naphthalene (in form of

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The object in using a concentrated solution of hydrobromic acid is that this solution allows all of the hydrobromic acid gas to pass through, and, at the same time, dissolves and retains any free bromine better than water, thereby giving the red phosphorus a chance to combine with it.

As the name indicates, these moth balls are used for protecting clothing against moth. The preparations sold under that name in this part of the country has been found to consist almost, if not entirely, of naphthalene, and may be obtained at any drug store for 5 or 10 cents a pound.

In the quantitative experiments the mixture of naphthalene and bromine was gently warmed toward the end of the reaction, in order to drive off any small quantities of hydrobromic acid which might remain dissolved in the bromnaphthalene.

That more than the theoretical quantity of hydrobromic acid was obtained in this experiment is accounted for by the fact that, during the operation, the wash bottle containing the concentrated hydrobromine acid got quite hot so that hydrobromic acid distilled over into the vessel in which the acid was finally collected.

moth balls) dissolved in a small quantity of kerosene, gave 47.5 grams of hydrobromiic acid. Theory — 48.5 grams HBr.

V. —95 grams of bromine, with 12 grams of naphthalene (in form of moth balls) dissolved in a small quantity of kerosene, gave 60.5 grams of hydrobromic acid. Theory—48.5 grams of HBr.

In all there was obtained 202.5 grams of hydrobromic acid, the theory being 222.5 grams for the quantity of bromine used, a loss of only 9.1 per cent.

In addition to these experiments, which were conducted with the view of finding out the quantity of hydrobromic acid set free, the method has been tried upon the lecture table with entire success. The gas was collected, handled and experimented with the greatest care. The method is certainly to be recommended for lecture work and for the preparation of large quantities of the acid.

Preparation of Hydriodic Acid.

The method here proposed for the preparation of this acid depends upon a reaction first observed by Etard and Moissan, viz., that when iodine and common resin (colophony) are heated together hydriodic acid is evolved. Not having access to the original papers of Etard and Moissan upon this subject, we are unable to judge from the abstract whether it was ever proposed to utilize the reaction in the preparation of the acid, or whether it was simply their object to call attention to it as being one of the reactions which iodine is capable. Be this as it may, it is certain that this simple mode of preparation of hydriodic acid has escaped the notice of American chemists; at least it has never come into general use; and hence it cannot be amiss to call attention to it with such modifications as have been found advantageous.

When a mixture of iodine and common resin, in about equal parts by bulk, is heated, hydriodic acid, together with small quantities of iodine, are evolved. The mixture foams considerably, however, and a black, disagreeable liquid distills over. To obviate this and to render the hydriodic acid as pure as possible the following method was tried successfully:

Ten grams of finely divided iodine are mixed with an equal bulk of finely powdered resin and this mixture is then intimately mixed with a little more than an equal bulk of white sand. The mixture of iodine, resin and sand is then placed in a small glass retort, the neck of which, accurately fitted with a cork, is connected with one of the necks of a double-neck Woulff's bottle, and extends for some distance into the Woulff's bottle. The other neck of the Woulff's bottle is connected with a U-tube containing red phosphorus. This U-tube in turn is connected with a calcium chloride cylinder, which is filled with alternate layers of glass-wool and phosphorus pentoxide, the calcium chloride cylinder being connected with a tube for the delivery of the gas.

On gently heating the retort containing the mixture of iodine, resin and sand hydriodic acid gas is freely evolved, together with small quantities of iodine and the brownish liquid to which reference has already been made. Both of the latter are condensed in the Woulff's bottle, and if any iodine escapes condensation at this point, it is held back by the red phosphorus in the U-tube through which the gases next pass. On passing through the cylinder containing the phosphorus pentoxide the hydri-

odic acid is dried completely, so that it may be collected in cylinders by displacement of air as a perfectly colorless gas. Without special precaution 5.4 grams of hydriodic acid were made from 10 grams of iodine by this method.

It should be said, further, that the method is a rapid one and in every way adapted to work on the lecture table. The apparatus once set up and the mixture put in the retort, one can easily collect, in a few minutes, a sufficient quantity of the dry gas to illustrate its remarkable and beautiful properties. For example, the apparatus having been set up, the gas was prepared and collected in quantities sufficient for the following experiments, and the experiments themselves performed all in about a quarter of an hour:

1.—Introduction of lighted taper into the gas.

2.—Action of dry chlorine on gaseous hydriodic acid to show formation, first of iodine and then of iodine trichloride.

3.—Decomposition of the gas into its elements by passing it through a heated tube.

4.—Oxidation of the gas by fumes of nitric acid.

5.—Absorption of the gas by water, and preparations of aqueous hydriodic acid.

In view of these results there can be no doubt as to the efficiency of this method of preparing hydriodic acid.

In conclusion it may be said that both of the methods above described for these two acids are highly satisfactory. The materials used are such as are easily accessible to all. There are no explosions attending the formation of these acids, nor is there any troublesome phosphonium bromide or iodide produced to clog up the apparatus, as is the case with the methods involving the use of phosphorus. The methods are rapid and practically free from the objections which may be urged against the other methods which have previously been proposed for the preparation of these two acids.

How to Calculate Equivalent Weights.

From the Druggists' Circular.)

The atom of hydrogen is the unit of the atomic system of weights; when we say that the atomic weight of oxygen is 16, we mean that its atom or smallest conceivable particle weighs sixteen times as much as the equal sized atom of hydrogen. But as we cannot fix a precise size for the atoms, we cannot state their absolute weight; we cannot reckon them in grains or fractions of grains. But this causes no difficulty in arriving at practical results. The proportions of all the atoms which go to form a given molecule remaining constant, the theoretical unit of weight may be translated into any practical unit desired. If we consider the hydrogen atom to weigh 1 grain, the oxygen atom will weigh 16 grains, and consequently the molecule of water containing two hydrogen atoms and one oxygen will weigh 18 grains. Grams may, of course, be substituted for grains with the same results, and so may any other unit from ounce to ton. The officinal phosphate of sodium, the proportion of phosphorus in which forms the subject of one of our correspondent's questions, consists of a molecule weighing 358; that is, its weigh is 358 times that of an atom of hydrogen. This molecule contains one atom of phosphorus, the weight of which is 31. Now, if we translate our weights into grams, we can make the definite statement that 358 grams of sodium phosphate contain 31 grams of phosphorus. This being established,

we can easily calculate by simple proportion (or "rule of three") the amount of phosphorus in any given quantity of the phosphate. If, for instance, we wish to know the amount of phosphorus in 800 grams we would state it thus: As 358 (the weight of the molecule) is to 31 (the weight of the phosphorus atom), so is 800 to the figures sought:

358 : 31 : : 800 : 69.273.

The gram being taken as the unit the answer is, of course, in grams.

Our correspondent's second question, although apparently different, amounts to exactly the same thing. To ascertain the quantity of a given element or compound required to form a certain weight of a new compound into which it is to enter, the problem must be stated in the same way, only being careful to note whether in the case of complex reactions any portion of the original atoms escape as gases or otherwise.

Granular Effervescing Preparations.

(Ch. & Dr.)

The demand for granular effervescent preparations by prescription is largely on the increase. We may have a demand for 2 grains to dram hydrobromate of caffeine one hour, and later 5 grains, or possibly a combination with bromide of sodium. Consequently, we must be prepared at short notice to dispense, if possible, variously medicated effervescent granules. In making them citric acid is a necessary constituent, the water of crystallization being required to give a coherent mass that can be granulated by pressing through a sieve. As the medication varies so must the relative amount of citric and tartaric acids to suit the medicament; thus a hydrous or deliquescent substance requires less of the former and more of the latter. The U. S. P. uses alcohol for damping the ingredients of a caffeine preparation and omits citric acid. The heat applied should not exceed 100 degrees C., otherwise the granules are colored and carbonic acid is driven off. But a strong heat obviates the use of the B. P. proportion of citric acid, and examination of trade-samples shows that this fact is known and acted upon by manufacturers.

As to neutrality, theoretically and practically the granules are generally slightly acid. In some cases it is necessary to make an exactly neutral granule if the therapeutic action is to be maintained. For example, piperazine only acts in alkaline solution, and it requires care to compound, as it must not be allowed to combine with the acid; so the proper way of making it is to thoroughly mix the piperazine with the bicarbonate, and any pre-decomposition in the granule takes place between the acids and the soda, for which they have greater affinity. Pharmaceutically, the order of mixing has also a great deal to do with the product. Piperazine is invariably granulated without heat at all, the formula being adjusted to yield a coherent mass when simply mixed in the proper order.

The effervescent citro-tartrate of sodium affords a basis suitably generally for medication where the quantity of medicament is small—such as citrate of caffeine 2 grains to 1 dram; antipyrin, 5 grains; iron carbonate, 5 grains; iron and arsenic, iron and quinine, and so on. Another type is the sulphate and phosphate of sodium, and the sulphate of magnesium granules where the medicament forms 50 per cent, although ultimately, when dried, actually about 25 per cent of the two former and 40 per cent of latter. These are naturally much less effervescent than the former type, al-

though the sugar is entirely left out of sodium salt preparations for this and physical reasons. In the magnesium preparation the granule is overburdened with medicament and sugar, leaving only 50 per cent of available effervescing material.

There is a demand for granules medicated with insoluble substances, such as euonymin, phenacetin, sulphonal, salicin, quinine salicylate, and bismuth salts. These are neither elegant nor palatable, and in all cases should be pointed out to prescribers as unsuitable modes of exhibition, excepting, perhaps, the bismuth salts, where the nascent carbonic acid would increase the effect. Liquids, the active principles of which are not dissipated on heating, may be mixed with the sugar or the bicarbonate, and dried before incorporation with the acids. Such potent remedies as strychnine and arsenic can only be diffused evenly by adding them in solution to the sugar or bicarbonate, and drying at a low temperature before mixing with acids. In addition to two pharmacopoeial granules without sugar, there are others of that nature in frequent demand, sugar being contra-indicated. Such preparations are not so uniform unless sifted and made with a fine sieve, because the binding power of the sugar is absent, but they give a brisker effervescence.

As to the size of granules, the author uses No. 12 and No. 6 sieves, and finds the former most suitable for granules with a large percentage of medicament or sugar. The small granules produced by it are more quickly decomposed in water, but more prone to caking in the bottle unless dried until pulverulent. It is a mistake to sacrifice to uniformity or size either the effervescence or color of the granules. Consequently, for all practical purposes, and so that they may keep under varied conditions, a No. 6 or No. 9 is the most suitable sieve.

Granular Effervescents.

Referring to the B. P. method, as exhibited in sodii phos. eff., the author said that the heat of a water-bath is best. The granulation may be done admirably with a fork having three or four prongs so bent as to be from 3-16 inch to ¼ inch apart. In effervescent salts there are two essentials—base and active principle. After many experiments the author had found the following the best base:

Bicarbonate of soda	17 parts.
Citric acid	6 parts.
Tartaric acid	6 parts.
White sugar	9 parts.

The finished preparation is slightly acid, which is an advantage. The active ingredient is mixed with the base in the proportion required. The method of granulation which Mr. Clarke favored is as follows:

Place an enamelled basin with an oval bottom over a water-bath, and when quite hot and dry add, say, ½ pound of the ready-mixed powder. Allow to remain about a quarter of a minute (longer or shorter, according to temperature), when the powder begins to "cake." Now take the fork, and so manipulate it as to make the whole of the salt pass through its prongs. Remove from the source of heat and continue trituration, gradually diminishing the pressure until the granules become cold and brittle. The size of the granules depends greatly upon the rate of trituration, therefore too much energy is to be avoided.

The drying, he explained, is best done by the sun. The mixture loses 1-19 of its weight by granulation.

Caffeine Citrate Effervescens.

Citrated caffeine	4 parts.
Bicarbonate of sodium	46 parts.
Tartaric acid	24 parts.
Citric acid	16 parts.
Refined sugar	10 parts.
	100 parts.

All in powder.

This preparation contains rather over 4 per cent of citrated caffeine. The dose is 1 dram.

Mag. cit. gran. the quantity of magnesium sulphate should not exceed ½ ounce to the pound. The following is a good formula:

Bicarbonate of soda	17 ounces.
Tartaric acid	13 ounces.
Citric acid	2 ounces.
Sulph. of magnesium (dried)	1 ounce.
Sugar	1½ pounds.

Granular citrate of magnesia is prepared on the large scale by heating the ingredients in shallow steam-pans, and passing the pasty mass through sieves with large meshes. Citric and tartaric acids must be used.

Lemon Kali.

Pulv. sacch. alb.	2 pounds.
Pulv. acid. tart.	1 pound.
Sodae bicarb.	1 pound.
Ol. limonis.	2 drams.

Mix and sift twice.

Summer Saline.

Sodae bicarb.	2 ounces.
Ac. tartarici	1½ ounces.
Pot. acid. tart.	1½ ounces
Sodae sulph. exsic.	1 ounce.
Sacch. alb.	6 ounces.

Mix, and pass through a fine sieve.

Cheltenham Salts.

Glauber salts, Epsom salts, common salt, equal parts, powder.

Mix.

Dose: One-half ounce.

Saline.

(The popular form for Eno substitute.)

Pulv. acid. tartaric.	2 ounces.
Sodae bicarb.	2 ounces.
Mag. sulph.	1 ounce.
Pulv. pot. bitart.	2 ounces.
Mag. cit. efferves.	2 ounces.
Pulv. sacch. alb.	4 ounces.

M.

Effervescing Cheltenham Salts.

Tartaric acid, dried	25 parts.
Tartrate of iron	1 part.
Seidlitz salt	120 parts.

Mix.

Dose: A teaspoonful in a glass of water.

Hydrobromate of Caffeine Granular.

Soda bicarbonate	16 ounces.
Tartaric acid	15 ounces.
Bromide of potash, powdered	4 ounces
Caffeine	4 drams.
Sugar, powdered	6 ounces.

Mix well and sift through a fine sieve; dampen a portion of the mixture at a time with strong alcohol. Make into a compact ball and force through a sieve of proper mesh to make granules of the size desired, dropping them on trays lined with paper; dry very carefully by the heat of the sun or moderate artificial heat, and fill into wide mouth bottles, taking care that the bottles are absolutely dry. Cork tightly to exclude the air. Other granular effervescent preparations may be made in the same manner by substituting in the formula in proper proportions any other active ingredient desired.

Should granulation by means of heat of the water bath be preferred (see foregoing remarks) replace one-third of the tartaric acid, with powdered citric acid.

Celery Caffeine Compound.

Soda bicarbonate	16 ounces.
Tartaric acid	15 ounces.
Bromide of potash, powdered	4 ounces.
Caffeine	4 drams.
Acetanilid, powdered	1 ounce.
Celery seed, powdered	2 ounces.
Alcohol	6 ounces.

Macerate the celery seed for three days in the alcohol, and percolate.

Mix the other powders thoroughly and sift well; dampen with the percolate and granulate. See remarks on granulation after the formula for hydrobromate of caffeine.

On the Preparation of Compressed Tablets.

A

There is one form in which medicine is very frequently used at the present time, that gives the retail druggist ample opportunity to show his individual skill and meet the many demands of his customers without resorting to the products of others; I mean compressed tablets.

The enterprising manufacturers not only will furnish them direct to the physician, but will solicit orders also from the druggist. No pent-up Utica is theirs, the whole boundless domain of physics is embraced in their all-absorbing love. Nor will the doctor, prone to the easy paths in the practice of medicine, stop his ears to the seductive arguments of the traveling salesman. The manufacturer sees the opening for trade, the retail druggist tries to ignore it. But it is useless; the doctors want compressed goods, and if they cannot get them from the retail druggist first-handed they will get them where they can. It is useless to say that they are not used, or that they cannot be made by the retail druggist. They are used and the retail druggist can furnish them in a better condition for administration than is often done by the manufacturer. The druggist can fill a doctor's own prescription, leaving the doctor no excuse for using that of others. He can make them hard or pliable, to suit the wants of the physician. By this means, the patient, the doctor and the druggist are brought nearer together, between whom there should be mutual confidence. It is urged by many druggists that they can buy tablets at a lower price than they can make them. This is not so for goods of the best quality; further, there are some compressed goods which are popular as domestic remedies, which change in appearance by keeping long, if made properly. For instance, soda mint tablets, such as usually put on the market, if they have the full amount of oil in them and ammonia they will turn yellow; if they have not they are of but little use, and the buyer is disappointed or cheated. A druggist could make up a small quantity at a time and have them fresh; customers always want things fresh.

Soda mint is very easily made. Mix 1 pound of soda, gum arabic 1 ounce, oil of peppermint 3 drams; and carbonate of ammonia 1 dram; dampen with alcohol and water, run through a No. XX sieve and dry. Make into 5-grain tablets, and sell them to your customers as the best in the market; for they are of your own make. These will be what they profess to be, and your patrons will soon find it out.

If you understand the principles of pharmacy, you can soon learn how to make compressed tablets, and, learning how, you will become better druggists. Of course, as graduates, you know the chemical relation of drugs, how and when chemical reactions

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A Read by J. A. McFerran, M. D., at a pharmaceutical meeting Philadelphia College of Pharmacy. From Am. Jr. Ph.

take place; this will serve a good purpose here. For some time past there have been used many tablets of calomel and bicarbonate of soda. Your chemistry will tell you if these salts be mixed wet, and granulated, decomposition will take place, and the question would be, how to avoid it? You might do so in several ways; but I will mention only one. Take bicarbonate of soda 10½ drams, gum arabic ½ dram, mix and dampen with water, run through a No. 40 sieve, dry and put into a bottle; add calomel 1½ drams, and shake this until every granule is coated. The calomel will adhere to the small particles of soda hardened with the gum; this will obviate any necessity of talc. The object is to prevent the soda and calomel coming together in a damp condition. Make up into 1-grain tablets, each of which will contain 1-12 of a grain of calomel. This illustrates pretty well how chemical incompatibles may be put together in a compressed form and still retain their individuality, and, better, how in some cases a dangerous result may be avoided from mixing together articles innocent in themselves; but deleterious as factors in a product. The soda hardened with the gum is scarcely in the least hygroscopic, and the tablets made with it, in the manner stated, will keep without change fully as long as a druggist who has them for sale desires. The calomel being put in last answers the purpose of its indications as a medicine, and at the same time as a protection against adhesion to the dies and punches. In all these combinations a certain amount of brains is a sine qua non, and may be written on the formula Quantum sufficient. Here as elsewhere the dictum of the teacher cannot give individual skill, nor can the dreams of theory take the place of applied knowledge.

At the start remember, and never let it be forgotten, that facts established cannot be changed, and it is with facts you have to deal. The metal of which the dies and punches are made is a fixed unalterable fact. You may change the form, the peculiar construction of the punches or die, but so long as the face of them presents a smooth surface to the material to be compressed, it is always the same. Remembering this, you will not ascribe the fault to the die or punch if your material adheres to them. The punch should be perfectly smooth and have sharp edges, and move freely in the dies. They should be made of tool steel and tempered just hard enough to prevent bending under pressure— beyond this you should expect nothing, and if the material adheres to them, you must look to the material as the thing at fault. As a rule you should cause the cohesive property of the material to be greater than the adhesive, and when, by experiment, you find where the fault is, all that you have to do is to apply your knowledge of the nature of the different excipients to correct it. There are some materials that are neither cohesive nor adhesive; for instance, if an ounce of pulverized charcoal were ordered to be made into 40 lozenges, you would have no trouble in their sticking to the dies and punches, but you would have a great deal in getting any conesion between the different particles of the material. The question here would be to add something that would cause a cohesion greater than adhesion, and, at the same time, not destroy the effect of the charcoal as a remedy. Here dextrin, wax, gelatin, gum arabic and tragacanth, mastich, etc., present themselves, as the different particles of the charcoal must actually be glued together.

If you were ordered to make 480

grains of salicylate of soda into 96 tablets, you might add some pulverized acacia, dampen with alcohol and water, run through a No. 30 sieve and dry. Just before using stir in some talc to prevent sticking. There are other ways without the use of talc, but it is better to learn this way first.

The coal oil products will claim your attention very often. Most of them are not soluble in water, and when pressed alone may prove useless on account of their insolubility. A small quantity of starch added to the mixture may often become of great service. Say you take salol, phenacetin, starch; dampen with alcohol, run through a No. 20 sieve, shake over a gas jet to slightly warm to granulate and dry; a moderate heat assists in granulating. There is no need of anything to prevent sticking.

There is a point that it is well to remember; any liquid that is not a solvent to any of the ingredients in the compound will act as a protection against adhesion to the dies. In the manufacture of refined naphthalin into tablets, the material will stick to the dies if something is not used to prevent. As naphthalin is not soluble in water, water should be used to dampen, and this is effectual against adhesion.

In making tablet triturates you will find sugar of milk alone makes the tablets too brittle; to correct this add about one part in 8 of cane sugar as the base, dampen with alcohol, and make up damp, unless they contain extracts; in that case you would have to make up dry and use the talc to prevent sticking. The talc should always be stirred in after the material has been granulated and dried. When talc is objectionable, white cosmolin or albolin can be used pretty freely, if you have a machine that will feed a damp and sluggish material. By putting the tablets into some absorbent powder after they are made and apply heat, most of it will disappear.

Learn the nature of each article that you wish to compress and take advantage of your knowledge of the solubility in different menstrua, and when the contrary nature of the different articles in a combination precludes the use of this knowledge, fall upon such correctives as experience and your own thoughts suggest to meet the particular case. In making up compounds, reduce all to a fine powder as far as practicable; in this way you will make more regular granulations and finer looking tablets. Take the familiar brown mixture; gum and licorice, each 2 pounds; opium, 219 grains; benzoic acid, 219 grains; camphor, 140 grains; oil of anise, 219 grains; tartar emetic, 110 grains; nitrate of potash, 1,750 grains; sugar sufficient for 10 pounds. If these be thoroughly mixed and ground to a fine powder, put into a wide receiver and hang a wet sponge to the under side of the lid; the material will absorb enough moisture to dampen during one night; next morning run through a No. 30 sieve and dry; on account of the extracts and the sugar you cannot do without talc or lycopodium to prevent sticking. If you prefer, you can use diluted alcohol and dampen with a hand atomizer.

In filling prescriptions of small quantities there is often no need of elaborate work in granulating; sometimes when not incompatible powdered soap rubbed up with the articles ordered prepares them to be run through a sieve; simply dampening with ether puts a powder into a granular condition. And when running out a pound might require something to prevent sticking, 10 to 20 tablets would require nothing. Wetting with alcohol and drying will almost always leave the mass grainy. It does not

matter how fine your material is, all you want is that it will tumble and not hold together on account of the moisture in it. I might talk for a week about material; but I wish to say something about how to make the tablets.

In the first place do not get the fidgets, see that everything is in place and that your machine is clean. Choose the set of dies required; and in this machine designed especially for druggists you will find by lifting a small shaft and removing a pin you can take off the feeder. Turning a few turns on this thumb screw you can pull out the die holder; while this is out you can see if the internal part of the machine is clean. The die holder being out, put in a top punch the size you wish, put the die into the die holder, insert the bottom punch, put in the die holder with its containing die and punch, fasten into place by turning thumb-screw slip on the feeder, drop the small vertical shaft into place and you are ready for work. Weigh out the quantity for one tablet, pour it into the die and screw up the bottom punch until the material comes even with the plate. Turn on the pressure and when the top punch is at its lowest depth, turn the knob at the top of the eccentric strap until you feel the pressure. Make two or three tablets to see whether the weight is all right, then put on more pressure if necessary and finish your work. The first tablets should not be pressed much; when you are sure of your weight you can powder the trial ones between your fingers and return to the feeder. The small cup should be used in making up small quantities. Put it in by taking off the top of the feeder and simply putting the cup into its place; the motion of the feeder in going backward and forward will cause the material to drop into the die; the remnant of one or two tablets can be brushed into the die and there is no need of wasting any material at all. The feeder is so constructed that there can be no leakage from beneath the feed. The lower punch is so constructed that there is the least amount of friction possible. One great fault in making tablets is in using too much pressure, running at the rate of 60 per minutes, the pressure should scarcely be felt on small tablets; but by taking a tablet between the fingers a little experience will tell you whether to put on or take off pressure which is easily done by simply turning the knob to the right or left. In making tablets whenever you hear a rubbing sound when the tablet is ejected you may know that the material needs correcting. As the feeder is so easily taken off you can remove it with its contents without wasting a particle, correct the material by adding talc, or what else is needed; put it back and proceed. Do not undertake to make tablets too fast; a regular easy motion is the best, and you will accomplish more than by trying to do a great deal in a short time. I am sure this machine will do all that is required by a retail druggist, as well as it is possible for a machine to do it. It is strong, it takes up but little room, is easily kept clean and is so simple that any one can understand it and run it. You can make quinine tablets, hypodermic tablets and such things as you wish to avoid excipients in; besides, by the construction of the feeder you can make up the flat friable triturates faster and more regular than on plates, and that too without the use of talc or other insoluble excipients. The how to make those things does not properly belong to my short talk on tablets; any one wishing to learn can do so on a proper occasion.

Here are quinine tablets made without gum, oil, starch, or talc and

other tablets of different sizes and shapes, made on a machine similar to this, which should be evidence conclusive that a retail druggist can make his own tablets and furnish physicians who desire to think for themselves, any tablet that they wish.

Preparation of Compound Tablets. B

The tablet machine should be kept scrupulously clean, and the surface of the dies and punches smooth and polished. Before commencing operations two or three tablets should be made from weighed quantities of material, to enable the operator to adjust the pressure and size for the work in hand. Excessive pressure should be carefully guarded against,† and a regular, easy motion of the machine aimed at. The soluble substances therefore should be compressed as lightly as possible. Unduly light pressure, on the other hand, is accompanied by a greater tendency for the material to stick to the face of the punches. Coblentz states that the pressure should be regulated so that the tablets may readily be broken in half by the fingers, but should not break to pieces when dropped upon the floor. "Capping," i. e., the splitting off of the surface of the tablet, may be remedied by slightly dampening the granulated material with water, reducing the pressure, or by changing the weight of the tablet.

The three main points in tablet making are, (a) to regulate carefully the pressure, (b) to insure proper cohesion of the particles of substance under compression, and (c) to prevent adhesion of those particles to any part of the machine. The skillful dispenser, with his knowledge of what is best to use in any given case as a pill excipient, will not experience any difficulty in deciding whether gum arabic or tragacanth, syrup, dextrin, wax, mastic, or other adhesive agents should be employed. And he will also be fully aware that to prevent adhesion to the dies, etc., some liquid must be used which is not a solvent of the substance undergoing compression. The rapid disintegration and solution of tablets is facilitated by adding finely powdered starch, from 1-20th to 1-10th the weight of material, to the granulated substance ready to be compressed. On the other hand, glucose, which should be diluted with 25 per cent of water before use, renders tablets hard and tough, so that they will not readily disintegrate. This is frequently an advantage when it is desired that the tablets should dissolve slowly in the mouth. To prevent adhesion to the die a little powdered French chalk may be sifted into the material just before compression. White paraffinum molle (2 per cent dissolved in sufficient ether) often facilitates the compression of a dry powder, and improves the appearance of the finished tablets, if diffused through the granulated material, the latter being subsequently sifted and dried before compression.

Preparation of the Material.

Experience proves that it is not desirable to have the substances to be compressed in a very fine state of subdivision, as a fine powder cannot be satisfactorily compressed into uniform and well-finished tablets. The

*Reprinted from Pharmaceutical Journal.

†A case recently occurred in a Northern town which forcibly illustrated the mischief that may result from compressing insoluble substances too much. The patient, acting under medical instructions, had been taking compressed tablets of salol for some length of time; prepared by a wholesale firm. Later, an operation for intestinal obstruction became necessary, and the surgeon was astonished to find the whole of the tablets unaltered in the intestine.

granular product obtained by grinding hard crystals represents the condition that should be aimed at, powdered ammonium chloride and potassium chlorate, as supplied in commerce, being good examples of what is required. In many cases, however, it will be found necessary to reduce the substance to fine powder first, and granulate afterward. In dispensing small quantities the material may be obtained in the desired condition by simply damping with ether or alcohol by means of an atomizer, or by rubbing up with a little powdered soap, and afterward passing through a sieve.

With larger quantities of material, cane sugar and powdered gum are chiefly used, the former being preferable, as tablets prepared with it disintegrate more rapidly. Coblentz (Handbook of Pharmacy) recommends the addition to the substance to be granulated of 1-10th of its weight of cane sugar and 1-20th of its weight of gum. On the large scale white dextrin may often replace the gum. After thoroughly mixing, sufficient water should be added to render the powder of such consistence that it can readily be shaken through a No. 12 sieve without sticking to it or clogging the openings. Care should be taken to add the water in small quantities at a time, and to mix thoroughly after each addition. The powder is next passed through a No. 20 sieve and dried, after which a lubricant is added to enable the particles of powder to move freely over each other and prevent them sticking to the die and punches.

Finely powdered French chalk, lycopodium, powdered boric acid or an odorless hydrocarbon oil may be employed for this purpose. The better the granulated material has been dried the smaller the quantity of lubricant required. Coblentz says 10 to 12 drops of hydrocarbon oil, added by means of a spray, is usually sufficient for each pound, with French chalk, not exceeding one-fourth the weight of material, added after the oil. If, however, the tablets are to be dissolved boric acid should be used as the lubricant, clear solutions being thus obtainable. In many cases, of course, this latter addition would be undesirable, as in the case of mercuric chloride, in which chemical action would take place. When the lubricant added is a powder, it should be scattered over the material spread out on paper, and the whole slightly shaken up in a bottle. By this means the granules are not broken down, and they become coated very thinly with the lubricating powder. It is above all things necessary that the operator should be familiar with the nature of the substance or mixture to be compressed, as this must to a great extent guide him in selecting a suitable granulating medium and lubricant. As McFerran pertinently observes (see Phar. Jour. (3), XXIII., 974), "learn the nature of each article that you wish to compress, and take advantage of your knowledge of the solubility in different menstrua, and when the contrary nature of the different articles in a combination precludes the use of this knowledge, fall back upon such correctives as experience and your own thoughts suggest to meet the particular case." Tablet making is an art which requires not only carefully detailed instructions, but considerable experience and knowledge of the capabilities of the particular machine used.

Manipulation in Special Cases.*

*For convenience of reference details are here given of a number of special cases considered by Coblentz (Handbook of Pharmacy), McFerran (Pharm. Jour. (3), xxiii., 972) and Remington (Practice of Pharmacy), whose writings may be consulted for further particulars. Though sieves with meshes of various sizes are mentioned, a No. 30 sieve will usually prove fine enough in almost every case.

AMMONIUM CHLORIDE, in a slightly moist and finely granulated condition, can be compressed into tablets without any preparation.

CALOMEL WITH SODIUM BICARBONATE requires special treatment.

Sodium bicarbonate, 630 grains, and gum arabic, 30 grains, are mixed and damped with water, then passed through a No. 40 sieve, dried and bottled. Calomel, 90 grains, is added in the bottle, and the latter shaken until all the granules are coated. Finally compress into tablets (McFerran).

CHARCOAL and similar spongy bodies must be in impalpable powder, and should be granulated by the addition of at least 25 per cent of cane sugar. They require no lubricant, as a rule, and should be fed to the machine in very fine granular form. The granules should be passed through a No. 12 sieve, dried and then reduced until they will pass through a No. 60 to 80 sieve. A solution of gelatin may be employed instead of sugar, in which case a little French chalk be added afterwards.

EFFERVESCING MIXTURES should have their constituents granulated separately and mixed in a perfectly dry granular condition just before being compressed.

EXTRACTS require varying treatment, according to their condition. Powdered extracts should be mixed with starch powder before treating by the foregoing general process of Coblentz. Solid extracts should be rubbed to a syrupy consistence by the aid of a little water; the excess of water is then absorbed by the addition of about 25 per cent of starch powder, the mixture being left sufficiently moist to form a proper consistence or granulation. Fluid extracts should be evaporated to a syrupy consistence and then treated in the same manner as solid extracts.

HYGROSCOPIC OR DELIQUESCENT BODIES will need the addition of gum in the proportion of one-tenth the weight of substance, water being used for moistening.

HYPODERMIC TABLETS may be made with sugar of milk as a basis, but dried neutral sodium sulphate and purified sodium chloride or ammonium chloride are frequently preferable.

INSOLUBLE SUBSTANCES, such as acetanilid, phenacetin, sulphonal, etc., are best granulated with one-tenth their weight of cane sugar, water being used for moistening.

PEPSIN in powder should be prepared by adding to it one-tenth its weight of cane sugar, then spraying with diluted alcohol (50 per cent) and mixing to insure moistening of all the particles. The powder should then be capable of passing through a No. 80 sieve, and, after drying, is ready for compression. Scale pepsin requires only to be reduced to No. 30 or 40 powder and then lubricated.

POTASSIUM BROMIDE AND IODIDE simply require crushing, and should then be treated in the same way as ammonium chloride.

POTASSIUM CHLORATE should be used in the same condition as ammonium chloride, and is very readily compressed.

QUININE SULPHATE requires similar treatment to charcoal, but if, instead of French chalk, a little finely powdered arrowroot or ethereal solution of white pariffinum molle be added, the tablets will disintegrate more readily.

RHUBARB AND SODA, in combination, require one-tenth their weight of cane sugar, and should be granulated by means of a mixture of liquid glucose, 1 volume; water and alcohol, 3 volumes.

SALICYLIC ACID should be treated like charcoal, quinine sulphate and substances of similar nature.

SALOL AND PHENACETIN can be made into tablets by adding starch, moistening the mixture with alcohol, passing through a No. 20 sieve, then slightly warming, granulating and drying prior to compression.

SALTS containing water of crystallization should be reduced to fine powder, then mixed with one-twentieth their weight of powdered gum arabic, moistened and passed through a No. 12 sieve. The granules must then be dried and again powdered, mixed with one-tenth their weight of cane sugar, and moistened with just enough water to pass again through a No. 12 sieve. After drying, first spontaneously but finally by the aid of heat, pass the mixture through a No. 20 sieve, lubricate and compress.

SCALE PREPARATIONS generally require the same treatment as scale pepsin, which see.

SODA-MINT tablets are prepared by mixing sodium bicarbonate, 1 pound; gum arabic, 1 ounce; oil of peppermint, 180 grains; ammonium carbonate, 60 grains; damp with alcohol and water, pass through a No. 20 sieve and dry (McFerran).

SODIUM BICARBONATE requires the addition of 5 per cent of acacia, then moisten with water, sift and dry.

SODIUM SALICYLATE should be mixed with powdered gum, moistened with alcohol and water, passed through a No. 20 sieve and dried.

SUGAR OF MILK, when used as a vehicle for powders to be compressed into tablets, should be moistened with a mixture of 1 part of syrup and 2 parts of water.

The Manufacture of Compressed Tablets.

(Western Druggist.)

By F. R. Leder.

Notwithstanding the howl that is being raised in certain quarters against tablet-triturates and compressed tablets these goods seem to be daily increasing in popularity. Although these goods are ever increasing in demand, it is a fact that but few pharmacists prepare their own tablets but depend entirely upon the manufacturers or wholesalers for their supplies. Why is this so? Is the manufacture of these goods so difficult as to deter the pharmacist from making them? This seems to be the idea entertained by many, but it is far from being correct.

With the proper appliances and a little practice and experience there is no reason why any intelligent pharmacist should not be able to produce either tablet-triturates or compressed tablets the equals of those of the large manufacturers. Edward Squibb has been quoted as saying that in preparing large quantities of compressed tablets, the heavier particles settle to the bottom and that often an assay of the finished tablets will show that the different ingredients are not equally distributed throughout the tablets. If this is the case, is it not a strong argument in favor of the pharmacist preparing his own compressed tablets? If he do so, he is not compelled to crowd his shelves with compressed goods of the large manufacturers, but can prepare them as wanted in quantities to suit the demand, thus dispensing freshly-made goods and being absolutely sure as to their composition.

It is not my purpose to consider tablet-triturates in this paper, but to confine myself entirely to the consideration of compressed tablets, and to

enter into the detail of their manufacture as fully as is possible in a paper of this kind.

Some drugs compress readily without any special treatment, while others, being unadhesive, must be especially treated before they can be successfully compressed. It has been found that fine powders do not work satisfactorily in making compressed tablets, as a fine powder does not feed evenly and does not compress regularly. The powder is granulated by adding the proper adhesive and moistener, then passing through a sieve and drying. In the selection of the proper adhesive the pharmacist must use his judgment and strive to leave the finished tablet as soluble as possible. Among the articles used as adhesives, sugar, starch and acacia are most prominent, but glucose and dextrin also are sometimes used. Sugar, if it gives the necessary adhesiveness, is to be preferred to acacia, because the tablets made with it are more soluble. Sometimes it is necessary to use both sugar and acacia in order to make a powder sufficiently adhesive. In this case five per cent of acacia and ten per cent of sugar is the proportion generally recommended. Acacia should be used in all combinations of a hygroscropic nature. Glucose is used only where it is desired to make a hard tablet for slow solution in the mouth. Starch is recommended in tablets containing considerable quantities of fluid extracts or tinctures. As remarked above, it should be the aim to make tablets as soluble as possible, and this is best accomplished by granulating the powder with a considerable quantity of some soluble substance, such as starch or sugar.

It only stands to reason that substances which are considered insoluble in powder form, are much more so when compressed, unless mixed with some soluble substance which, dissolving out, brings about the disintegration of the tablet.

Materials.

Every part of the material that is desired to be compressed should be reduced to a very fine powder, then mixed thoroughly and the proper amount of adhesive added and mixed with powder ,the whole then moistened and passed through a sieve and dried. The moistening must be carefully done and must not be carried far enough to make the mixture stick to the sieve in passing through. Water, if carefully used, is the most generally useful moistener, although in some cases 70 per cent alcohol is recommended. I have in my own experience found a No. 20 tinned iron sieve to answer nicely. The granulated powder should be thoroughly dry before attempting to compress, for if not so, it sticks to the dies, and even when thoroughly dried, this is often a source of much annoyance. In order to overcome this tendency to adhere to the dies, it is customary to add some substance, such as talcum or white petrolatum, or, in case of hypodermic tablets, powdered C. P. boric acid, in small proportions. The more carefully the powder is prepared the less lubrication it will need, and only as much should be used as is absolutely necessary. White petrolatum is best used as a two per cent ethereal solution with an atomizer. The use of liquid petrolatum is not to be recommended, except in case the ether might have some solvent action that would be undesirable for the reason that a slight excess, which it is difficult to guard against, makes the tablets adhere. The petrolatum, however, solidifies as soon as the ether evaporates and is much to be preferred. The dry granulated powder is

sprayed with this solution and stirred with a spatula, or mixed on paper, then allowed to become dry, and then passed through the sieve. Both petrolatum and talcum are sometimes necessary. The talcum should be added to the powder after the petrolatum, and not until the powder has become dry. It is generally stirred in with a spatula or mixed in a wide-mouthed bottle by gentle agitation. Not to exceed three per cent of the weight of the powder to be compressed should be used. Boric acid is used, but not to exceed one and one-half or two per cent.

In making tablets as much pressure only should be used as is absolutely necessary. The molds should be kept absolutely clean and highly polished. It is impossible to make a smooth tablet with a rough die. Use no hard substance in removing adhering portions of tablets, for fear of scratching the dies. Some substances already in granular form compress readily without any preparation. Among these are granulated bromide of potash, iodide of potash, muriate of ammonia, chlorate of potash, and bisulphate of quinine compresses nicely without any treatment, but as it sticks to the dies, it must have some lubricant added. Three per cent of powdered talcum added in the manner directed above will overcome this. As the bisulphate of quinine is more soluble than the sulphate, it is generally preferred on this account, and the fact that it needs no adhesive makes it popular for use in tablets. The formula given below will fully illustrate the mode of preparing powders for compression:

Phenacetin .....1000 grains.
Powdered sugar ..... 100 grains.

Mix carefully, then moisten with water, pass through a sieve and dry. When dry, spray with ethereal solution of petrolatum and mix on paper. Allow the ether to evaporate and pass through the sieve again. Make 200 tablets. In this same manner tablets can be made of phenacetin and salol, antikamnia, antipyrin, chlorate potash, trional, sulphonal, bismuth subnitrate, bismuth subgallate, quinine salicylate, quinine sulphate, and many others. Petrolatum will generally be preferable as a lubricant, or it can be used in connection with talcum, or talcum alone can be used. Another illustration are tablets of benzoate of soda:

Benzoate of soda.....1000 grains.
Powdered acacia ..... 60 grains.

Mix thoroughly and moisten with water, then proceed exactly as in making tablets of phenacetin. In this way, using powdered acacia as an adhesive, tablets are generally made of such chemicals as benzoate of lithium salicylate of soda, etc.

As tablets containing acacia are not as soluble as those containing sugar, it is a good rule, where the substance is not readily soluble and where acacia is necessary as an adhesive, to use both sugar and acacia. Such substances as charcoal require either the addition of considerable quantities of sugar or of acacia before they can be successfully compressed. Some authorities direct the addition of 25 per cent of powdered sugar, others direct acacia, my own experience, however, leads me to favor a combination of 15 per cent of powdered sugar and 8 per cent of acacia. Sulphur and its combinations are also granulated in a similar manner.

Hypodermic tablets are usually made as tablet-triturates, and these are to be preferred to the compressed form; but where it is desired to make them by compression, pure cane sugar is much to be preferred to either the dried sulphate of soda, or chloride of sodium, or sugar of milk, as recommended in the standard works on pharmacy. Let a person take a tablet made with dried sulphate of soda as

the vehicle and drop it into water; he will find that it dissolves with difficulty. Some years ago it was used by some manufacturers, but they are all using powdered cane-sugar today.

Powdered boric acid should be used to prevent the material adhering to dies; 2 per cent will usually be found effiicent. The powder should be granulated and dried, and then the proper amount of boric acid added as directed above.

There is a large class of tablets that contain active alkaloids and very potent remedies which constitute only a small portion of the body of the tablet, the balance usually being sugar of milk. The writer prefers to add 10 per cent of powdered cane-sugar before granulating. They can be lubricated with either powdered talcum or white petrolatum. As an example, the following formula is offered:

Strychnine sulphate..... 3 grains.
Powdered sugar..... 30 grains.
Powdered sugar of milk....267 grains.

Mix thoroughly, moisten with water, granulate and dry. Lubricate with talcum or petrolatum, and make 300 tablets.

Tablets containing extracts are best made from the powdered extracts, as they are more easily mixed with sugar than the ordinary solid extract. If it is desired to use solid extracts, not in powdered form, they should be rubbed to a smooth paste with some suitable solvent, and then rubbed with a small quantity of starch and the solvent evaporated, the whole then to be mixed with a suitable quantity of milk sugar and granulated. Tablets made from tinctures are made in this manner, and many times these furnish all the moisture that is needed to granulate. Salts containing much water of crystallization should be reduced to a fine powder and then dried and mixed with 5 per cent of acacia and 8 per cent of sugar, and moistened with water and granulated by passing through the sieve and then drying very thoroughly and then lubricating. To this class belong such tablets as alum, sulphate of zinc, etc. Tablets containing pepsin and pancreatin in a pure state should be mixed with sugar of milk to which 5 or 10 per cent of powdered cane-sugar has been added and carefully moistened with water, granulated in the usual way and dried.

To make effervescent tablets the acid should be granulated with a part of the powdered sugar and dried. The rest of the ingredients containing the soda, etc., should be granulated with the rest of the sugar and dried, and then the two thoroughly mixed by agitation in some closed vessel. These can be lubricated with petrolatum if desired, or the whole of the ingredients may be dried separately and mixed, then moistened with alcohol and granulated, and dried as directed in the U. S. Pharmacopoeia, for making effervescent salts. The first is generally preferred, although it is simply a question of choice.

Tablets of calomel and bicarbonate of soda call for special treatment, in order to prevent chemical action between the soda and calomel. McFerran recommends that the soda bicarbonate be mixed with 5 per cent of powdered acacia, dampened with water and granulated, and then the calomel mixed with the same by agitating them together in a wide-mouth bottle until thoroughly mixed. The writer prefers, however, to proceed differently, using the following process:

Calomel .....200 grains.
Soda bicarbonate .....200 grains.
Sugar, powdered ..... 30 grains.
Acacia, powdered ..... 16 grains.

Mix the calomel and 20 grains of sugar, moisten and granulate; then mix the soda with 10 grains of sugar and the acacia and moisten and gran-

ulate. When both are dry mix in a mortar, reducing to fine powder, and moisten with alcohol and granulate and dry. Then make 200 tablets. In a similar manner other tablets containing chemicals likely to react on each other when moist are made.

Tablets containing extract of licorice are best moistened carefully with water and need no adhesive added.

Tablets of Soda Mint.

Bicarbonate of soda.....400 grains.
Powdered acacia ..... 60 grains.
Carbonate of ammonia.... 25 grains.
Oil of peppermint ..... 16 grains.

Mix thoroughly and moisten with water, granulate and dry. Lubricate with petrolatum. Make 100 tablets.

Tablets containing resins are sometimes moistened with 70 or 80 per cent alcohol; this, dissolving a portion of the resin, gives them the necessary adhesiveness in many cases. In some cases, however, water is to be preferred in such combination, for the reason that alcohol often tends to make hard granules that compress with difficulty and make a very hard tablet.

It is not to be expected that the pharmacist will succeed in perfectly preparing every combination on first trial, but there is no reason why any competent pharmacist should depend on the manufacturer entirely for his supplies.

If in doubt what adhesives to use with any combination, it is well to use 5 per cent of powdered acacia and 10 per cent of sugar. There are few powders that cannot be nicely granulated in this manner.

Many fail in trying to compress tablets before they are dry, and as a consequence have the powder stick to the dies. Some think that the harder you can compress a tablet the better. Nothing can be further from the truth, for only as much pressure should be used as is absolutely necessary. In selecting an adhesive, do so with a view of leaving the resulting tablet as soluble as possible. It is a general practice to compress tablets with as little adhesive as possible. This is done mainly to keep the size of the tablet as small as possible. The writer believes that in making tablets of such insoluble substances as salol, sulphonal, etc., that the presence of even as much as 25 per cent of powdered sugar would not be objectionable in any way and would add materially to the solubility of the tablet.

I have thought best not to speak of the different machines on the market for making compressed tablets; my observation is that care is necessary to do nice work with any one of them, and, with care, they all will do nice work. Each one possibly has its peculiar merits; but the one essential to success in making tablets is the careful preparation of the ingredients for compression, for it is impossible for any machine to do nice work with a powder not properly prepared.

(Ph. Era.)

Tablet triturates consist of medicine, which, if a dry solid, has been triturated with sugar of milk until a thorough and complete division and distribution of it has been made. In the case of pasty or fluid bodies, these are mixed in a wet state with sugar of milk, the whole dried, and then finely subdivided by trituration. The powder in either case is then formed into a pasty mass with varying proportions of alcohol and water, or other suitable menstruum, and afterward molded into tablets of uniform size and weight.

The formula for each separate combination is arrived at in the following way:

The mold is filled with finely powdered sugar of milk, which has been

wetted to a pasty mass with dilute alcohol. The tablets are then pressed from the mold, thoroughly dried, and weighed. This weight is generally 65 grains ıor 50 tablets for the rubber molds now usually supplied, making a tablet weighing slightly less than 1 1-3 grains when filled with plain milk sugar. The weight of the plain sugar of milk tablet is slightly increased with the increased solvent action of the menstruum, as more sugar enters the solution, making the tablet more compact. The next step is to ascertain how much milk sugar must be omitted from the previously ascertained amount in order to make room for medicinal constituents. For this purpose 130 grains of milk sugar are weighed off, which is equivalent to 100 finished tablets of plain sugar of milk. From these 130 grains a bulk is taken, equivalent, as nearly as possible, to that of the substance to be incorporated, and the weight noted. The active ingredient, if a dry solid, is now mixed with the remaining portion of sugar of milk by thorough trituration. In the case of solid extracts, tinctures and other fluids, these are mixed with the remaining portions of sugar of milk, if necessary, by the aid of water or some other menstruum which dissolves them perfectly, then the mass is dried and powdered.

After the mixture has been made, dried and thoroughly triturated, it is wetted with a suitable menstruum, and molded, care being taken to scrape the mortar as clean as possible in order not to waste any of the material. The tablets are then carefully dried. If there be any mass in excess of that required for the 100 tablets, it shows that not enough milk sugar has been taken from the original 130 grains. The weight of this excess is generally equal to that of an equal bulk of milk sugar. Hence it will only be necessary, at the next trial, to remove as much more milk sugar as the bulk of this excess amounts to.

If there should be less than 100 tablets, the weight of the number deficient is ascertained by determining the average weight of the finished tablets, and deducting the calculated weight of the bulk of sugar of milk originally separated. At the next trial the amount of milk removed from the original 130 grains should be as much less as the weight of the missing tablets amounted to. In each case the formula finally found, by actual experiment, to yield a correct result, should be noted in a special book for the purpose of future reference.

It is important that all the ingredients and tne mixture of powders ready for molding should be in the finest possible state of sub-division. If they are coarse, the tablets will not show a smooth, finished appearance. In tablets composed nearly all of milk sugar, if the latter be in a coarse powder, it necessitates the addition of more water to the alcohol than is required when the sugar of milk is in a very fine powder. The menstruum selected should possess a slight solvent action upon one or more of the ingredients, but the latter, should not be too freely soluble, since the mass is then molded with difficulty, and the tablets prepared therefrom will be uneven, sometimes being cracked on the surface and very hard. It should possess sufficient solvent action to make a firm yet not too hard a tablet, one that will hold firmly together when shaken in a vial, and which should readily disintegrate upon the addition of water. It is, however, impossible to prepare all the various combinations in such a form that they readily dissolve or diffuse upon the addition of water, the rapidity of disintegration depending upon the proportion and soluble character of the constituents.

The menstrua generally used are alcohol, absolute alcohol, alcohol and water, and chloroform. For tablets composed nearly entirely of sugar of milk, a menstruum composed of nearly three volumes of alcohol and one volume of water is preferable. For bodies insoluble in alcohol the proportion of water is raised in proportion to the increase of active ingredient. The menstruum must, therefore, be so adjusted that it will dissolve enough of either the milk sugar or of the active ingredient, to make a sufficiently firm tablet.

In preparing the powder for molding, it should be wetted to a pasty consistence, the mold placed upon a smooth surface, a pill tile answering admirably, and the wetted powder pressed into the spaces with a horn or ivory spatula, which is drawn over the mold. Sometimes the mass adheres to the spatula and is drawn from the holes. This is remedied by dipping the spatula in the menstruum used for wetting the mixture before drawing it over the surface. The mold is then reversed by sliding it toward and off the edge of the tile without raising it, the spatula is drawn over the other side of the mold, and the latter then again drawn toward and off the edge. The tablets are now pressed out by the punch-pin plate and allowed to dry a few minutes upon the punch pins, then shaken off by striking the pin plate forcibly upon the counter covered with a sheet of paper to receive the tablets.

Practical Suggestions About Lozenges.

In the manufacture of lozenges the paste is formed the same way as a biscuit maker mixes flour with water to make the dough, except that a thick solution of East India or Turkey gum is used for the mixing, instead of water, and finely powdered loaf sugar instead of flour. The paste, when made, is rolled out in the same manner as the baker treats the dough, and during this process sufficient starch powder to prevent it sticking to the slab is used. The thickness of the sheet of paste may be regulated either by the gauge at each end of the rolling pin, or judged by the sight, and must be, according to the lozenges to be made, from an eighth to a quarter inch thick. To make lozenges on the smallest scale, there must be employed a smooth marble slab, four feet long by two feet wide, to cut the lozenges upon, also a smooth stone slab of a lesser size to mix the paste on; a good palette knife, 15 or 18 inches long; a hand-brush, made with long, soft hairs; and small pieces of linen cloth to run through cutters when clogged with the paste; lozenge trays, made with smoothly planed seasoned deal, four feet long by two feet wide, with edges one inch deep; a hot closet or drying-room, with racks fitted round it to place the trays for lozenges upon, and heated, free from dust and smoke; small gallipots with some clean water must be kept near the cutting slab to place the cutters in to free them from the paste which clings to the edges, and must be wiped dry with the cloth named above.

In rolling the paste out to the required thickness, it must be lifted up with the palette knife two or three times to see that it does not stick to the slab, then to be taken up by rolling it round the pin, and after dusting the slab with more powder replace the sheet of paste, the upper side downwards, smoothing the surface of the same by dusting it with powder and using the brush over it. In cutting out the lozenges, commence with a straight line as close to the left edge as possible, and however slowly you may progress at first, keep parallel

with that all through the sheet. In emptying the cutters, place the lozenges evenly and closely together on the trays, which must first be thoroughly dried and covered with the starch powder.

Recipes and mixings for some of the most familiar kinds of lozenges are here given for beginners.

The Ordinary Peppermint Lozenges.

For twenty-eight pounds of finely powdered loaf or icing sugar, after making a bay in the center of the sugar placed on the slab, pour into it 2 quarts of thick gum mucilage; on that pour 1 ounce of either Mitcham or the best American oil of peppermint; work these two well together. When sufficiently mixed, stir in the sugar from all around the sides of the bay, and add to the mixture an eggspoon of smalts; work this in, and make the whole into a good stiff paste with as much of the sugar as can be used, and keep it ready on the mixing slab, with a damp, clean cloth covered over it for use. Take from the bulk about 2 pounds in weight, and work it with the hands into a compact square piece, keeping it free from sticking on the slab with the powdered starch; then proceed to roll, and cut it out in the shapes desired, and follow the preliminary instructions given above. The cuttings left on the slab from each sheet of paste must be mixed with each portion taken from the mixture to continue the process until the whole is used up. This is an example for all peppermint lozenges, the only difference in the quality or high-priced article being in the quantity and quality of the oil of mint used in making them, consisting of from ¼ ounce to 1½ ounces of the essential oil extra to that here given for the same quantity of sugar, and which are sold at a higher price and stamped "extra."

*Brit. Baker, Conftct. and Purv.

Ginger Lozenges.

Work into the same quantity as given above of sugar and gum, 1 pound of finely powdered best Jamaica ginger, ½ ounce of extract of ginger, ½ ounce of essence of lemon, and enough vegetable yellow to make the mixture a primrose color, and proceed to finish as directed previously.

Cough-No-More Lozenges.

All the cough lozenges sold, differ either in color, shape or taste. A good and effectual lozenge may be made as follows: Work into the paste of gum and sugar given some thick dissolved solazzi licorice to make it of a brown color, with 2 ounces of powdered ipecacuanha, 1 ounce of anise seed, 1 dram of acetate of morphine, and 1 ounce of powdered tartaric acid. The drugs to be carefully and thoroughly incorporated with the gum mucilage before mixing that with the sugar.

Bath, or Coltsfoot Lozenges.

The same mixture of gum and sugar as for coughs, leaving out the anise seed, but putting more dissolved licorice, 1 ounce tartaric acid and 1 ounce of oil of lemon previously stirred well in with the gum.

Black Currant Lozenges for the Voice, Sore Throat, Etc.

To 4 pounds of the black-currant extract, the consistence of thick honey, work in 10 or 12 pounds of finely powdered sugar, 1 pound of powdered Turkey gum, with 2 ounces of tartaric acid.

This recipe makes a better lozenge for the purpose mostly required if half a dram of capsicum is added.

Otto of Rose Lozenges.

To the same amount of gum and sugar as given in the first recipe, work into the gum 1 dram of otto of rose with 1 ounce of the French oil of geranium, 2 ounces of powdered tartaric acid, and color the whole mass with liquid carmine to a nice delicate pink.

Bronchial Lozenges, Brown. A

Ext. of licorice, powd.....10 pounds.
Oleo resin of cubebs..... 1 pound.
Powdered sugar q. s. to
make .....150 pounds.

Bronchial Lozenges. B

Cubeb powder .....½ ounce.
Stockholm tar .....½ ounce.
Oil of wintergreen.....20 minims.
Solution of potash..... 6 drams.
Orange flower water to.... 4 ounces.

Macerate for twenty-four hours in a warm place, shaking occasionally; then filter through kaolin.

Marshmallow ..... 2 ounces.
Hoarhound ..... 2 ounces.
Licorice ..... 2 ounces
Aniseed ..... 2 ounces.
Lobelia seeds .....½ ounce.
Hops .....½ ounce.
Ipecacuanna ..... 2 drams.
Cayenne ..... 2 drams.

Roughly bruise, and add to 1 gallon of water; boil, and allow to simmer for some hours; press and strain, then evaporate to about 30 ounces; add the infusion of cubebs, diluted with 4 ounces of rectified spirit, and filter.

Use this as stock solution, to be added to any of the usual sugar pastes, about 2 ounces to every 14 pounds of finished lozenges. A good plan is to arrange with some lozenge-maker to make and stamp the lozenges, using your medicated solution.

Weed Killers.

The most reliable weed killer for stonecrop is common vitriol, half a tea spoonful poured upon each root killing it. Sometimes the acid arsenical weed killer succeeds where the alkaline one fails. It is made as follows:

White arsenic .....16 ounces.
Hydrochloric acid .....20 ounces
Water .....220 ounces

Boil in an enameled basin until dissolved, and color with aniline green. When required for use dilute with about 10 volumes of water.

Alum Poultice.

Alum in fine powder.....30 grains.
White of egg .....No. 1.

Shake or beat together until a coagulum is formed. Useful in broken chilblains, chaps, sore nipples, chronic inflammation of the eyes; a good application for colored or black eyes.

Shoemakers Ink No. 1.

Crushed nutgalls .....18 ounces.
Extract of logwood ..... 4 ounces.
Copperas ..... 8 ounces.
Gum arabic, powdered..... 8 ounces
Fine lamp black..... 6 ounces.
Salicylic acid ..... 3 drams.
Alcohol wood ..... 8 ounces.
Water sufficient.

Boil the nutgalls and logwood in 64 ounces of water for half an hour, strain and wash the strainer with enough water to make the decoction measure 64 ounces. Dissolve the copperas and gum arabic in 48 ounces water, add this to the first solution and again boil for 10 minutes and strain. Mix the lamp black, salicylic

acid and alcohol together and form a smooth cream with them by the addition of a small quantity of liquid—finally mix the cream with the remaining portion of the liquid.

Shoemaker's Ink No. 2.

Powdered nutgalls ..... 2 ounces.
Copperas ..... 1 ounce.
Copper sulphate .....30 grains.
Powdered gum arabic..... 1 dram.

Dissolve in a quart of boiling water and allow the whole to stand a week before using.

Quinine Disguiser.

Fl. Ext. Yerba Santa Arom 16 ounces.
Glycyrrhizin ..... ¼ ounce.
Saccharin ..... 15 grains.
Vanillin ..... 5 grains.
Potash carbonate ..... ¼ ounce.
Simple syrup to .....128 ounces.

Curcumpino Inhalant for Insomnia.

Oil of cedar ..... 8 ounces.
Oil pine tar ..... 1 ounce.
Oil of peppermint ..... 8 ounces.
Oil of lavender ..... 3 ounces.
Oil of nutmegs ..... 4 ounces.
Oil of turpentine ..... 32 ounces.
Chloroform ..... 8 ounces.
Crystal vaseline oil .....192 ounces.
Or enough to make 256 ounces.

Mix. Saturate cotton batting with two ounces of the above mixture, place in pillow, promotes sleep.

Plant Lice Destroyer.

Salicylic acid ..... 1 ounce av.
Soft soap ..... 4 ounces av.
Quassia chips ..... 8 ounces av.
Water sufficient to make 128 ounces.

Boil the quassia with the water for one-half hour. Strain and dissolve in it the salicylic acid and soft soap. Add enough water to make the measure 128 ounces.

Powder Weed Killer.

Arsenic .....16 ounces.
Soda ash .....32 ounces.
Indigo .....½ ounce.

Mix well and direct that two or three tablespoonfuls be boiled in a quart of water and be mixed with a pailful of water for use as a weed killer. Caution as to the poisonous nature of the powder must be given.

Weed Killer Alkaline.

White arsenic .....1 pound.
Washing soda (soda carb.). 2 pounds.
Water ..... 6 gallons.

Dissolve the soda in the water by boiling; then add the arsenic and continue to boil until dissolved. Color with aniline blue or sulphate of copper. The product should measure 5 gallons. A teacupful of this solution is sufficient to mix with a pailful of water for watering garden paths.

Hair Curling Fluid.

Borax ..... 3 ounces.
Gum arabic ..... 1 drachm.
Hot water .....32 ounces

Dissolve the borax and gum in the hot water and when nearly cool add the spirit of camphor. On retiring at night wet the hair with the above liquid.

Cole's Lotion.

Sulphate magnesia ..16 ounces av.
Sudphate copper ....56 grains troy.
Zinc sulphate..... 1¾ ounces av.
Water ..... 2 gallons.

Dissolve the chemicals in the water.

Glycerine ..... 4 ounces
Carbolic acid .....160 drops.
Musk artificial ..... 5 grains.

Rose oil ..... 15 drops.
Citronella oil ..... 2 drops.

Dissolve the musk and oils in the carbolic acid; add the glycerine and let stand for 24 hours and add to the above sugar brown aniline, 5 grains, or enough to make straw color, or yellow aniline, 5 grains, to make green. Shake well. It will become clear in three days. Decant the clear portion and filter the residue.

Shellac Coating to Make Cardboard Greaseproof.

Shellac gum ..... 18 ounces.
Borax lump ..... 7 ounces.
Water boiling .....144 ounces.
Ammonia water, strong ... 4 ounces.

Dissolve the borax in the boiling water. Then add the shellac and stir until the shellac is dissolved. Then add the ammonia water and stir until the smell of the ammonia has disappeared. Strain through cheese cloth. Apply with a brush. The solution may be colored with aniline or other dyes. See page 88, liquid shoe polish.

Steel Welder.

Prussian blue ..... 2 ounces.
Iron filings ..... 1 ounce
Muriate of ammonia, powd.. 2 ounces.
Borax, powdered .....12 ounces.

Mix well and make into a paste with cold water. When dry, powder.

To Color Glass Jars, Windows, Etc.

Dissolve aniline dye of the color required in wood alcohol. Mix with clear copal varnish and apply. This is waterproof. A cheaper method is to take gelatine, 1 ounce, soak in water until it ceases to swell, say 12 hours. Then add hot water sufficient to make into a mucilage. In a portion of the water dissolve twenty to thirty grains of aniline soluble in water and a dram of carbolic acid crystals.

Iron Rust to Remove.

Cream of tartar, powdered.. 2 ounces
Binoxalate of potassium.... 2 ounces.
Mix well.

Directions: Moisten the stain with cold water and brush well with the mixture.

Water Finings for Laundries.

First fine the water with an alum solution. When the water is perfectly clear, add liquor potassa to soften the water. One ounce of alum dissolved in one gallon of water to the hundred gallons, followed by one ounce of carbonate of potash (pearlash) dissolved in one gallon of water.

Egg Preserver.

Silicate of soda (water-glass .....160 ounces.
Boiling water ..... 32 ounces.
Mix well.

The eggs may be varnished with this and when dry packed away in a cool place. Or 1 pound of the above mixed with a gallon of water may be placed in a stone jar and the eggs immersed. The first process is best. The solution of water-glass may be sold as a specialty under the name of egg preserving solution, and sold with directions to mix each pound with five quarts of cold water. This quantity will cover 17 or 18 dozen of eggs. Pack the eggs small end down and the eggs should be entirely covered with the liquid and a plate placed on top of the fluid to keep the eggs under the liquid. The eggs will keep in good condition for nine months or more. Before boiling prick the shell at large end with a pin to prevent shell from cracking in the boiling water.

DISINFECTION AND DISINFECTANTS.

By John Gay, M. R. C. S., L. R. C. P., D. P. H., London.

Disinfection is necessary when a person has had any infectious disease in a house. It is probable that the actual infection does not spread far from the patient, but is carried by attendants, infected articles carried out of the sick-room, cats, flies etc., or is directly caught by susceptible persons coming near the sick.

Some disease germs (bacteria) are easily destroyed, while others are resistant. These micro-organisms that produce "spores," such as the bacilli of anthrax (malignant pustule) and tetanus ("lockjaw"), are the most resistant to the action of germ-destroying agents; while those that are "spore-free," or "sporeless," are more easily destroyed.

The following are supposed to be sporeless: "The micro-organisms of putrefaction (pus-formation), of pneumonia, typhoid fever, Asiatic cholera, diphtheria, relapsing fever, and glanders. We do not yet know for certain if the specific germs of consumption, smallpox, scarlet fever, influenza, and measles, among several others, have resistant forms or not. Generally speaking, the pathogenic (disease-producing) germs have the least resisting power of all.

"A disinfectant can only be considered effectual when the specific cause of infection, and where this is bacterial, and the bacteria have resistant forms, these resistant forms also are absolutly destroyed in the infected article" (Koch). That is to say, that a substance can only be described as a "disinfectant" if it is able absolutely to destroy the most resistant forms of disease-producing germs.

Other substances not so acting may be classed as "Deodorants." "Antiseptics" are substances that prevent the growth of bacteria, but may not be strong enough to destroy them when present.

Part I.—Disinfectants.

The most reliable germicides which will kill the spores of bacteria are:

Heat (Fire).—Destruction by fire is the most effectual means of disinfection. Saturating with paraffin and igniting, with proper precautions and preferably in a suitable chamber with shaft.

Moist Heat.—Boiling for not less than ten minutes, preferably half an hour, effectually destroys all forms of germs.

Steam, under pressure and at a temperature of 220 degrees to 260 degrees F. (not above) for ten to twenty minutes, according to thickness and quality of material, is the most satisfactory means of disinfecting articles that cannot be destroyed. It is applied in specially constructed disinfectors, the steam is applied at a temperature of 220 degrees F. to 260 degrees F. (not above) for ten to twenty minutes, according to the thickness of the material, and at alternating pressure. A vacuum is produced, and the steam then turned on. A temperature of over 212 degrees F. is produced in the center of the thickest material. This method is generally admitted to be entirely effective in its object; its advantages are that articles are not scorched; most are very little, if at all, injured; the penetration is rapid and through considerable thicknesses. But leather goods, as boots, furs, and book-bindings, are destroyed, and glue in upholstered work is softened by this process.

Heat produced by burning gas in a closed chamber is really moist heat, and at 220 degrees to 260 degrees F. can be used for leather and for thin articles that can be exposed or spread out. The gas-burners must be supplied with sufficiency of air, and the chamber must be corrrectly ventilated.

Dry heat, at 225 degrees F. to 240 degrees F., can be used only for very thin articles, as at the necessary temperature for penetration of even moderately thick things they are scorched or burnt.

All germs that produce disease can be destroyed by moist heat, at a temperature of 212 degrees F. (100 C.), in five minutes. Destruction of tubercle bacillus is doubtful at that temperature; probably longer exposure is quite safe.

Cold.—Freezing does not destroy the spores of bacilli.

Light.—Direct sunlight, even in winter, has been shown to be a powerful means of disinfection (Marshall Ward).

Direct exposure to sunlight kills the tubercle bacillus in a few minutes to several hours (Koch). Moist anthrax spores killed in forty-four hours. Sporeless bacteria destroyed in half an hour to two hours.

Corrosive Sublimate (Perchloride of Mercury).—Very poisonous; but the taste of the solution is so nauseous that there is not much fear of it being taken by mistake. It can be colored with blue, such as is used in washing, or aniline blue, to avoid accidents.

The strength to be used is 1 part in 1,000 to 1 part in 500 parts of water. The local government board recommends (1892) a solution made with ½ ounce corrosive sublimate, 1 fluid ounce hydrochloric acid, and 5 grains of commercial aniline blue, in 3 gallons (a bucketful) of water. It is not to be further diluted in use, and must be kept in jars or buckets of earthenware or wood, not of metal. It is not to be used for the disinfection of the expectoration in phthisis (consumption). For a general disinfectant it is the most convenient, cheapest, and best substance at present known. A convenient form is that of tablets, which can be dissolved in water to make solutions of certain strengths. These tablets should not be given into other than practiced hands without proper caution, as they are apt to be dropped about rooms and found by children or pet animals.

Strength of 1 in 500 to 1 in 1,000 will quickly destroy all forms of germs, including spores; 1 in 1,000 to 1 in 5,000 will, in a quarter of an hour, destroy all sporeless bacteria known. It cannot be used in albuminous fluids, as it precipitates albumin, but the addition of hydrochloric acid, or of chloride of ammonia, or soda, will prevent precipitation in albuminous material.

The biniodide of mercury is a more powerful disinfectant than the perchloride; it can be used in exactly half the strength. It does not precipitate albumin, and is said to be less poisonous; it is insoluble, except in a solution of iodide of potash or perchloride of mercury. It is sold in the form of tabloids, that will dissolve in water, under the name of "Iodic Hydrarg." Forty grains of perchloride of mercury, 150 grains of iodide of potassium, in 80 ounces of water, make a solution of 1 in 1,000. Probably the best disinfectant for the hands.

Chloride of lime (calcium hypochloride) is a poisonous white powder. It must be kept dry till it is required for use. A standard solution is made by dissolving 6 ounces of best quality chloride of lime in 1 gallon of pure water (Sternberg). It should not be

used to wash walls of dairies, as the milk may become tainted with the smell.

A 5 per cent solution destroys spores in three minutes, a 1 per cent solution in seventy minutes, non-sporing bacteria in five minutes. A 1 per cent solution can be relied on to destroy the bacilli of typhoid fever and chlorea in ten minutes (Missen, 1890).

Sol. 1: 10 completely destroys anthrax spores in 20 minutes; 1 : 200 destroys non-sporing diphtheria and cholera bacilli and Staphylococcus aureus in five minutes (Klein).

A 1 per cent solution disinfects dried tuberculous sputum in one minute (Delepine and Ransome).

Permanganate of Potash.—Non-poisonous. Crystals easily soluble in water, making a deep-red solution. The presence of decomposing matter, or of carbolic acid, turns it brown, when it is rendered useless. To be effective, it must be used in strength of 5 per cent—1 ounce in 1 pint of water. This stains, and thus renders it a rather impracticable disinfectant. Sanitas will to some extent remove the stain. Although it will destroy anthrax spores, the length of time, 24 hours, renders it rather impracticable. It may be useful for washing wounds, in weaker solution, as it is non-irritating. A weaker solution of about 1 tablespoonful of the strong solution or of Condy's Fluid in a pint of water forms a very good deodorant for removing bad odors and for offensive discharges.

A 5 per cent solution destroys anthrax spores in one day (Koch). A solution of 1 in 833 destroys pus cocci in two hours (Sternberg). Soaking in a saturated solution for 1 minute after thorough washing of the skin with soap and water, the stain then decolorized by immersion for 1 minute in saturated solution of oxalic acid, is recommended for sterilizing the hands (Report, Johns Hopkins Hospital, 1890).

"Izal" (the "Thorncliffe Disinfectant").—A creamy-looking emulsion, readily miscible with water. Has strong disinfecting powers, is non-poisonous, and non-volatile.

An emulsion of 1 part in 200 of water (a tablespoonful in 5 pints) destroys most known pathogenic bacteria in fifteen minutes. If added to typhoid stools in proportion of five times as much disinfectant as matter to be disinfected, may be relied on to destroy the infectivity in ten minutes. Spores of B. subtilis destroyed in thirty minutes with solution of 1 : 10 (Klein); 20 per cent solution destroys spores of B. subtilis in thirty minutes; 10 per cent solution destroys spores of anthrax in twenty minutes; 1 per cent solution sufficient for destruction of non-sporing bacteria in fifteen minutes (Notter and Frith); 1 in 10 destroy dried tuberculous sputum in forty-five minutes (Delepine).

Chinosol.—A potassium salt of oxyquinoline sulphonic acid, $C_9H_6NKSO_4$. A yellow powder, easily soluble in water, said to be non-poisonous, but toxic symptoms have been observed, especially in the lower animals, the cat being very susceptible (Hobday); is non-irritating in solution, and does not stain.

1 in 100 destroys B. coli communis and spores of anthrax in 5 minutes (Klein). 1 in 2,000 destroys other non-sporing pathogenic bacilli in ten minutes (C. G. Moor).

The following cannot be relied on to destroy spores:

Earth.—The upper layers of the soil act as a strong disinfectant, owing to the presence of "nitrifying organisms," that are able to render harmless decaying matter probably by the process of oxidation.

Carbolic Acid.—A strong caustic poison. In its pure form it consists of white crystals. When heated, it liquifies, and if one-tenth of its volume of water is added, will remain liquid. It is diluted by adding an ounce of this strong liquid carbolic acid to hot water to make up a pint, and stirring well, this makes a solution of 1 part in 20. Pure carbolic acid only should be used, hence, as it has to be employed in considerable strength, it is too expensive for use in large quantities.

Will not destroy the spores of anthrax, even after days of exposure. Spores placed in crevices of boards and freely watered with a 5 per cent solution for several days were not affected (Koch). A 4 per cent solution with addition of 2 per cent hydrochloric acid, destroys spores in one hour (La Place). A 1 to 5 per cent solution destroys sporeless bacilli in one to two hours. A 3 per cent solution destroys tubercle bacilli in sputum in twenty-four hours (Schill and Fischer). Albuminous matter does not interfere with its action.

Lime-washing.—Milk of Lime.—A 20 per cent solution made by adding 1 part of slaked lime to 4 parts of water.

Useful for washing the walls of mortuaries, stables, etc., and for disinfecting contents of privies, middens, etc. Cheap, and generally easily obtained.

Bacillus of glanders and some putrefactive bacteria destroyed in twenty-four hours by one application (Jaeger). Typhoid bacillus destroyed in two hours (Sternberg). 1½ litres will disinfect 100 litres of contents of latrines. For discharges, the milk of lime must be added in sufficient quantity to render the mixture alkaline (Pistor).

Sulphur Fumes (Sulphurous Acid, Sulphur Dioxide).—Produced when sulphur is burnt. Can be obtained in cylinders in form of a liquid.

It is questionable whether substances in the form of vapors are of any use in disinfecting. Practical experience has given to sulphur fumes a high position as a successful means of preventing spread of infectious disease. Even if this is not due to the sulphur, it will be well to retain it at present, at least, as part of a process inculcating care in dealing with infected rooms. In the directions in addition to the sulphur, further means are advised to complete disinfection.

Fails to destroy spores (Koch). As a disinfectant, is of very little value (Behring). The specific germs of tuberculosis, glanders, farcy, typhoid, cholera, and diphtheria are destroyed in twenty-four hours by the combustion of 60 grams per cubic metre (Trinot, 1890). Probably twelve hours will suffice if sufficient moisture be present (Committee, American Public Health Association). Useless for disinfecting tubercle-infected rooms (Delepine and Ransome).

A professional disinfector of long experience states that he has known of no cases of reinfection after treating with sulphur, rooms infected with variola, scarlet fever or measles (the bedding being disinfected by steam), and that the use of more than 1 pound to the 1,000 cubic feet will cause damage to the contents of the room.

Klebs-Loeffler b. on lint and swabs of cotton-wool, sterilized on exposure to 1 per cent of sulphurous acid in the air of a room for six to eight hours (Kenwood, 1896). The air of the room to be disinfected should be moist.

Chlorine.—A very pungent gas, said to be stronger than sulphur fumes. Made by adding 22 pounds of hydrochloric acid to 15½ pounds of chloride of lime for every 1,000 cubic feet. The lime must be divided and placed in several bowls or saucers, the acid in corresponding bottles. Place the saucers in different parts of the room, near the ceiling; tip the bottles into

the lime, and quickly leave the room. The room to be closed for eight hours (Whitelegge). The air must be thoroughly saturated previously with moisture, as by a steam spray.

Chlorine will not penetrate crevices, nor affect germs shielded in fabrics. Moist air containing 45 per cent chlorine vapor will destroy anthrax spores (exposed) in three hours. Useless for disinfection of tubercle-infected rooms.

Formalin (CHOH).—A 40 per cent solution in water of formic aldehyde, a gas obtained by passing the vapor of methyl alcohol over red-hot platinum. It is only very slightly poisonous. The gas is very volatile and diffusible, pungent and irritating to the nose and eyes; has no effect on the skin, or on brass, nickel, copper, or gilt articles; colored material is unaffected, but blood and faecal stains are indelibly fixed. In a concentrated form it has a "leather-forming" action on animal tissues.

A 3 per cent solution destroys anthrax bacillus in 15 minutes (Walter).

Formalin may be used as a spray, a solution of 1 (of formalin) in 80 of water (2 ounces to 1 gallon), by means of the "Equifex" sprayer, spraying the air, floor, and walls, from below upwards (Leslie Mackenzie).

Formic aldehyde gas may be evolved by allowing the vapor of about 2 litres of methyl alcohol to pass through a perforated plate of red-hot asbestos impregnated with platinum black for a room of 3,000 cubic feet. Six hours' exposure (Kenwood).

When formalin is directly heated, instead of formic aldehyde gas being given off, a white residue called "paraform" (a polymerized state of formic aldehyde, C3H3O3H3) is left. Paraform has been made into tablets of 15 grains, and when heated in an "Alformant" apparatus (The Formalin Hygienic Company, Limited), the gas is given off. Ten tablets for 1,000 cubic feet; six hours' exposure. The "Formogene" Richard Lamp (Germicide Disinfecting Association) is a more powerful apparatus (Kantback). If the formalin is mixed with calcic chloride, and heated under pressure, formic aldehyde is given off. For this purpose Trillat's "autoclave" is used, the gas escaping through the keyhole of the door into the room to be disinfected. This is a good method, but the apparatus is very heavy, and requires constant supervision during the process.

As the result of experiments, it has been shown that formic aldehyde is a powerful disinfectant both as a gas and in solution, but the gas can only be relied on for the disinfection of surfaces, not for penetration; and probably half, or as much again, of the paraform should be used, as is advised by the makers of the lamps. In all cases where this gas is used, the crevices in the room must be most carefully pasted up. Bedding, etc., must be afterwards disinfected by steam.

Note.—The three gaseous disinfectants above mentioned, viz., sulphur dioxide, chlorine and formic aldehyde, are those now generally adopted for the surface disinfection of rooms. In fact, the choice may be said to lie practically between the old established method of sulphur fumigation or the use of formic aldehyde apparatus. The recognized germicidal properties of formic aldehyde gas, taken in conjunction with its suitability in other respects, has led to its being more frequently recommended in houses of the better classes. But in the case of houses more or less crowded and frequently dirty there are good reasons for preferring the old system of sulphur fumigation, which is necessarily followed by the wholesome use of Nature's best disinfectant—plenty of fresh air—together with free use of the whitewash brush, soap, and hot water. When it

is remembered that something like five-sixths of the disinfection ordered and carried out by sanitary authorities concerns houses which are let at weekly rents, it will be seen that medical officers of health are more than justified in their adherence to a system which has produced such excellent practical results (Seaton).

Creolin ("Jeye's Disinfectant").—Mixed with water it forms an emulsion that has been shown to have a decided germicidal power.

A 2 per cent solution destroys known pathogenic bacteria, if sporeless, in fifteen minutes.

Sanitas.—A very good deodorant for sweetening the air of rooms. Sprinkled freely about the room, will remove or cover all bad odors. It will not harm carpets, furniture, etc.

Charcoal.—Animal charcoal, used dry, in saucers or plates about a room, seems to have the power of purifying the emanations from the bodies of sick persons. It is not to be relied on to prevent contagion spreading from the body.

Substances in the form of powders are useless as disinfectants, but there may be no objection to the use of "carbolic" and other powders, merely as deodorants, sprinkled in dust-bins, over drain-openings, etc., as a temporary means of removing unpleasant odors. They must not be relied on to prevent the spread of infection. Substances dissolved in oil have much less effect than when dissolved in water.

Part II.—Practical Disinfection.

The simplest instructions are:

Burn everything that can be burnt; boil anything that can be so treated; wash and scrub well, and expose to fresh air and sunlight; send woollen articles, mattresses, etc., to be disinfected by steam by professional disinfectors. It will be better to leave the use of chemical disinfectants to the sanitary officers.

For the Person.—The hands of those attending the infectious sick should be frequently washed thoroughly with hot water and soap, using a nail brush and keeping the nails short. If soiled or possibly infected with discharges, etc., or if engaged in dressing wounds, or attending other surgical cases or operations, the hands should then be dipped for a minute in a solution of perchloride of mercury, 1 in 1,000, or biniodide of mercury, 1 in 2,000, or solution of chlorinated soda diluted with ten times its bulk of water, or solution of carbolic acid, 1 ounce in 2½ pints of water (American Public Health Association).

It has been shown that the complete disinfection of the hands is most difficult to accomplish (Lockwood, Ledham Green). Probably the biniodide of mercury is the best agent, or the method recommended before.

If the hands become sore from the use of disinfectants, after washing, pour on glycerine, rub well in, and then dry.

Gloves should not be worn when attending infectious cases; but if they have been worn, must be burnt.

For washing the body of a patient leaving the sick-room after infectious disease, a bath of corrosive sublimate, 1 in 2,000, applied to the scalp and the whole of the body thoroughly, then soap-and-water bath. This is to be given the evening before, and repeated on the morning of leaving the room, when all clean clothes must be put on, and the patient must not return to the sick-room.

For a mouth-wash, a tablespoonful of Sanitas in a tumbler of water, or five to ten drops of Condy's Fluid, or solution of permanganate of potash, in a tumbler of water.

Bed-pans and other Utensils in Sick-room.—Pour boiling water into the utensil after each time it is used, if it will not crack it, and let it stand covered ten minutes; or add each time 1 quart of solution of chloride of lime, 6 ounces to 1 gallon of water, and let it stand an hour before emptying; Izal may be used, or carbolic acid 1 in 20, chinosol 1 in 600, creolin 1 in 40, perchloride of mercury 1 in 500, well mixed with the faeces and allowed to stand not less than an hour (Hill and Abram). In typhoid the urine must also be disinfected.

In the country the stools may be mixed with sawdust, paraffin poured over, and then burnt.

For Spittoons, etc.—For expectoration and discharges add boiling water or the "standard" chloride of lime solution as above, or receive on rags and burn.

To the expectoration in consumption add the same solution, or keep a small quantity of a solution of pure carbolic acid, 1 ounce (2 tablespoonfuls) diluted with one pint of water, in the spittoon. It is probably sufficient to put water in the spittoon to keep the sputum moist if the contents are afterwards burnt (J. E. Squire).

Clothing, Linen, etc.—During an infectious illness use rags or linen that may be burnt for the nose, mouth, etc. Before sending to the wash all linen must be boiled for ten minutes or thrown directly into a solution of corrosive sublimate, 1 in 2,000, in which it must remain for four hours, then rinse in fresh water, wring out, and send to be washed. Or the linen may be put into a tin box or a sheet soaked in corrosive sublimate, this wrapped, if necessary, in a mackintosh or dry sheet, to be taken through the house, and removed to a disinfecting station.

At the end of an illness linen must be treated in the same way, woollen clothes, mattresses, blankets, woolen curtains, carpets, etc., must be sent to a disinfector in the sanitary district in which the case has occurred to be disinfected by steam.

Linen stained with blood must not be boiled till the blood has been washed out in cold water.

Furniture may be washed over with solution of corrosive sublimate, 1 in 1,000, or, if upholstered, may be saturated with the solution and dried. This will not hurt any material, if no coloring matter be added to the solution.

Rooms, after the patient has left, must be disinfected. Close windows and register or grate, open out all articles of furniture. Place a large tray or bath in the center of the room with a few inches of water in it, or, in large rooms, place several on the floor, and divide the sulphur. Stand in it, on a brick, an old saucepan or small iron bucket. Break up roll sulphur, using 1 pound of sulphur for every 1,000 cubic feet of space in the room (multiply the length of the room by the breadth, and the result by the height, in feet, and divide by 1,000). Have ready paste and strips of paper. Drop a lighted wax match or some red-hot coals on to the sulphur. When alight, leave the room quickly,, lock the door, and paste the crevices well up on the outside. Leave for eight hours. Then open the door, quickly open the windows, and leave the room. When the air is clear, have all woolen articles, mattresses, pillows, etc., removed to be disinfected by steam or heat. The floor and woodwork must be washed with a solution of corrosive sublimate, 1 in 1,000, and then with soap and water; the walls stripped and repapered, and the ceiling whitewashed. Formic aldehyde may be used A better plan would be to have the walls covered with washable material or paper, the whole room washed

with corrosive sublimate solution, then soap and water, the ceiling whitewashed, and the sulphur fumigation dispensed with. It must be clearly understood that disinfection by aerial fumigation must include subsequent thorough washing of all washable surfaces with a disinfectant, free ventilation of the room, and steam disinfection of bedding, clothes, etc., and that this cannot be properly carried out until the patient has left it. A steam spray, such as a Siegel's spray, to be obtained at most chemists, or larger size for large rooms, might be conveniently used where rooms have only been occupied for a short time, as in influenza. A solution of corrosive sublimate, 1 in 500, placed in the reservoir, will give a spray of about half that strength. This may be moved about a room, sprayed over the walls, etc., and may be kept going for an hour or more. It will also be found useful for disinfecting the clothes and person after accidental contact with infectious cases, to stand in the spray, allowing it to play freely over the head, face and clothes. By means of the "Equifex" disinfector, a room may be rapidly sprayed with solution of perchloride of mercury, and thoroughly disinfected in the hands of a competent person. The specific germ of diphtheria will retain its vitality for long periods if not completely destroyed. For such cases it has been shown that rubbing down the walls with stale bread will best clear them of bacteria (Esmarch). The crumbs must be swept up and burnt. For rooms in which consumptive (tubercular) patients have been nursed, direct sunlight is very effective, or the room and walls may be washed down with a solution of chloride of lime, 1 ounce in 5 pints of water, or the paper stripped and the walls left exposed to sunlight before repapering and rewhitening the ceiling. After typhoid fever or cholera, disinfect the bedding and wash the room with corrosive sublimate solution.

For the Dead.—In cases of persons dead of dangerous infectious disease, such as smallpox, cholera, etc., the body is to be washed with a solution of corrosive sublimate, 1 in 500, or chloride of lime; then envelop the whole body in a sheet saturated with the same solution. In addition, the coffin may be filled up with sawdust impregnated with Izal, Creolin or Sanitas. Preferably cremation should be advised, especially in cases of smallpox and diphtheria.

Rags from infected districts must be burnt; if for paper-making, must be subjected to steam disinfection or boiled in water.

Ships—Infected ships to have the bilge-water pumped out and the bilge well washed through with fresh sea water, the inhabited parts fumigated with sulphur, and all possible surfaces washed with a solution of corrosive sublimate, water-tanks emptied and refilled. A fine spray of boiling water has been used by means of the "Equifex" disinfector for cleansing ships.

For watering streets in dry weather, and for cleansing of garbage, etc., a solution of permanganate of potash is cheap and useful for the ordinary watering of streets in hot weather as a deodorant to remove unpleasant smells.

Drains, inks, W. C.'s, etc.—Drains cannot be properly disinfected, as the quantity of fluid will too much dilute the substances used. They must be freely flushed with water. If sinks and w.c.'s are offensive, a solution of chloride of lime, Creolin, or Izal, may be poured down to remove the smell until steps have been taken to rectify any faulty arrangements. For privies and middens, for deodorizing, use powdered chloride of lime.

Note.—A solution of 1 part in so many may be roughly made by dissolving 1 grain in the stated number of drops of water. One grain in 1 ounce of water may be taken as 1 part in 480 parts of water; 1 grain in 2 ounces as about 1 in 1,000.

It must be clearly understood that whatever disinfectant is employed must be used in the strength given above, in the matter to be disinfected. To add a small quantity of a 5 per cent solution of carbolic acid, for instance, to a bucket of water for disinfecting linen, will probably render the disinfectant useless.

USES OF SALT.

Salt is the Readiest and Cheapest of Remedies.

From the Philadelphia Ledger.

Salt cleanses the palate and furred tongue, and a gargle of salt and water is often most efficacious.

Nasal catarrh is often cured by a syringe of weak brine or by snuffing fine dry salt up the nostrils. Neuralgia pains give way also.

A pinch of salt on the tongue, followed ten minutes afterward by a drink of cold water, often cures sick headache.

Salt hardens gums, makes teeth white and sweetens the breath.

All household pets should have salt within their reach.

Salt improves the coat of a horse, and gall is prevented by bathing with salt water.

Cows should have rock salt in every field.

Cut flowers may be kept fresh by adding salt to the water.

All skin diseases are relieved by salt added to water.

Medical statistics claim exemption from renal troubles in sailors accustomed to a heavy proportion of salt food.

Pelagra, a parasitic disease of the Italian peasantry, has been attributed to a consumption of unsalted food.

Weak ankles should be rubbed with a solution of salt, water and alcohol.

Salt in solution is an antidote to many poisons.

Rose colds, hay fever and kindred affections may be much relieved by using fine dry salt like snuff.

Dyspepsia, heart burn and indigestion are relieved by a cup of hot water in which a small spoonful of salt has been melted.

Salt and water will sometimes revive an unconscious person when hurt, if brandy or other remedies are not at hand.

Pulverized rock salt in equal quantity of turpentine is excellent dressing for a felon. Apply a rag soaked in this every twenty-four hours.

Hemorrhage from tooth pulling is stopped by filling the mouth with salt and water.

Weak and tired eyes are refreshed by bathing with warm water and salt.

Public speakers and many noted singers use a wash of salt and water before and after using the voice, as it strengthens the organs of the throat.

Salt rubbed into the scalp or occasionally added to the water in washing prevents the hair falling off.

Feathers uncurled by damp weather are quickly dried by shaking over fire in which salt has been thrown.

Salt should always be eaten with nuts, and a dessert fruit salt used to be specially made.

If 20 pounds of salt and 10 pounds of muriate of ammonia be dissolved in

seven gallons of water and bottled, many fires might be prevented. By splashing and spraying the burning articles the fire is soon extinguished. An incombustible coating is immediately formed.

Add salt to the water in which black and white cotton goods are washed.

Flat irons may be made smooth if rubbed over salt.

Copper and brass may be quickly cleansed by dipping half a lemon in fine salt and then rubbing over stained objects.

Lemon and salt also removes stains from the fingers. Do not use soap afterwards.

Frozen vegetables should be thawed by covering in cold salt water in a warm place.

If a small teaspoonful of fine salt be added to a quart of milk it will be preserved sweet and pure for several days.

Eggs packed in salt can be kept for several months.

Eggs and milk bought from farms by the coast are finer and sweeter than those bought inland.

A pinch of salt added to mustard prevents it souring.

A smoldering or dull fire may be cleared for broiling by a handful of salt.

Salt thrown on any burning substance will stop the smoke and blaze.

Bread insufficiently salted becomes acid, dry and crumbles.

Bread made with salt water is said to be good in some cases of consumption.

When the contents of pans boil over salt on the range prevents odors and the spot is more easily cleaned.

When cabbage, onions or strong-smelling vegetables have been boiled in pans, to prevent odors clinging to them, place some salt on the stove and turn the pans bottom up over the salt. In a few minutes the pans will smell sweet.

All salads should be soaked in salt and water to destroy animalculae or small worms.

Make a strong brine and water garden walks to kill weeds. A moderate quantity of salt stimulates their growth.

Salt added to the gardener's leaf mold heap prevents a too rapid fermentation and escape of ammonia.

Dry rot in gate posts, outhouses, joists and beams may be checked by equal proportions of salt and chloride of zinc—100 pounds of each to 350 pounds of water.

Salt in bulk used to be considered a good cargo for a new wooden ship.

Salt and camphor in cold water is an excellent disinfectant in bedrooms.

Housemaids should pour salt water, after using it, down the drain pipes.

Salt absorbs noxious gases arising from decaying vegetable matter, refuse heaps, etc.

Sewer gas is counteracted by a handful of salt placed in toilet room basins.

Water for laying dust is more effective when salt is added. Sea water is generally used in English coast towns for this purpose.

Rattan, bamboo and basket work furniture may be thoroughly cleaned by scrubbing with brush and salt water.

Japanese and plain straw matting should be washed with salt and water and rubbed dry. This keeps them soft and prevents brittle cracking where traffic is heavier.

Brooms soaked in hot salt water wear better and do not break.

Bedroom floors may be kept cool and very fresh in summer if wiped daily with cloth wrung out of strong salt water. All microbes, moths and pests are thus destroyed.

Baths, washbasins, polished slate and stone slabs are quickly cleaned by rubbing with dry salt before washing.

Black spots on dishes and discolorations on teacups are removed by damp salt.

Salt in the water cleanses glass bottles and chamber ware.

Window glass, lamps and lamp glasses, marble and stone vases or mantels, granite sills, etc., if rubbed with salt, are quickly cleansed. A teaspoonful of salt in kerosene makes a brighter light.

Ink stains from carpets and table cloths (if fresh) can be removed by successive applications of dry salt.

Carpets are brightened and their colors preserved if wiped with clean cloths wrung out of salt water.

All colored cotton materials will not fade by subsequent washing if placed in boiling water in which three gills of salt to every four quarts of water has been melted. Leave garments in water till cold.

Salt dissolved in alcohol or ammonia will remove grease spots.

Soak silk handkerchiefs in cold salt water for ten minutes, wash out of this water and iron immediately.

USES FOR AMMONIA.

A few drops of ammonia in a cupful of warm water carefully applied will remove spots from paintings as well as from the frames.

Nothing will so quickly clean and polish the spigots of sink and bath tub as a little ammonia and suds mixed with the fine ashes from the ash flue of the range.

Equal parts of ammonia and turpentine will take paint out of clothing, even if it be hard and dry. Saturate the spots as often as necessary and wash out in warm suds.

If those who perspire freely would use a little ammonia in the water in which they bathe each day it would remove any disagreeable odor and keep the flesh sweet and clean.

Put a tablespoonful of ammonia in a quart of water, wash your brushes and combs in this, and all the grease and dirt will disappear. Rinse, shake and dry in the sun or by the fire.

For an excellent silver polish that may be kept on hand for everyday use, mix a few drops of ammonia with the common whiting used for silver, and add enough water to make of the consistency of cream; bottle this and keep it tightly corked. Drop a little of this mixture on the polishing cloth, rub the silver lightly and rinse in warm water, and the silver will be instantly brightened and cleaned without the hard rubbing necessary when polishing with the dry whiting.

For removing paint and putty marks from window glass this same mixture of ammonia and whiting may be used for stubborn cases, or simply a little ammonia in warm soap suds. If whiting is used, let it become dry on the glass before polishing.

MEASUREMENT OF WOOD AND LUMBER.

A cord of wood contains 128 cubic feet. To ascertain how many cords there are in a pile of wood, multiply the length by the height, and that by the width, and divide the product by 128.

To ascertain the circumference of a tree required to hew a stick of timber of any given number of inches square, divide the given side of the square by .225, and the quotient is the circumference required.

Round timber, when squared, loses one-fifth.

To measure round timber take the girth in inches at both large and small ends, add them, divide by 2, which gives the mean girth; then multiply the length in feet by the square of one-fourth of the mean girth, and the quotient will be the contents in cubic feet. This rule is commonly adopted, and gives four-fifths of the true contents one-fifth being allowed to the purchaser for waste in sawing.

To measure inch boards, multiply the length in feet by the width in inches, and divide the product by 12. The quotient will be the contents in feet. For lumber 1¼ inches thick, add ¼ to the quotient. If 1½ inches thick, add ½. If 1¾ inches thick, add ¾. If 2 inches thick, divide by 6 instead of 12. If 2¼ inches thick, add ¼ to the quotient and so on. If 3 inches thick, divide by 4. If 4 inches thick, divide by 3. If 6 inches thick, divide by 2.

MEASUREMENT OF STONE AND BRICK WALLS.

A perch of stone is 24.75 cubic feet. When built in the wall, 2¾ cubic feet are allowed for the mortar and filling; hence, 22 cubic feet of stone make one perch of wall.

Masons estimate 7 pecks lime and 4 bushels sand to a perch of wall.

To find the number of perches of stone in a wall, multiply together the length, height and thickness in feet, and divide by 22.

Common bricks are 7¼ to 8 inches long by 4¼ inches wide and 2½ inches thick. Front bricks are ¼ inch longer and wider.

It requires 20 common bricks to lay one cubic foot. In an 8-inch wall 15 common bricks make one foot of wall.

To find the number of bricks in a wall 12 inches or more in thickness, multiply together the length, height and thickness in feet, and that again by 20. For an 8-inch wall, multiply the length by the height, and that by 15, and the product will be the number of bricks in the wall. If the wall is perforated by openings, such as doors, windows, etc., multiply the length of such openings by the width, and that by the thickness, and deduct from the cubic contents of the wall before multiplying by 15 or 20 as above.

MEASUREMENT OF CISTERNS.

To Measure the Contents of Cisterns.—To ascertain the contents of circular cisterns, multiply the square of the diameter in feet by the depth in feet, and that product by 373-4000 for the contents in hogsheads, or by 373-2000 for barrels ,or by 4 7-8 for the contents in gallons.

Square Cisterns.—Multiply the width in feet by the length in feet, and that by the depth in feet, and that again by 19-160 for hogsheads, or by 19-80 for barrels, or by 7 48-100 for gallons.

AMOUNT OF PAINT REQUIRED FOR A GIVEN SURFACE.

It is impossible to give a rule that will apply in all cases, as the amount varies with the kind and thickness of the paint, the kind of wood and other material to which it is applied, the age of the surface, etc. The following is

an approximate rule: Divide the number of square feet of the surface by 200. The result will be the number of gallons of liquid paint required to give two coats; or, divide by 18 and the result will be the number of pounds of pure ground white lead required to give three coats.

HOW TO MIX PAINTS FOR TINTS.

For Brown, mix Red and Black.

For Chestnut, mix White and Brown.

For Purple, mix White, Blue and Lake.

For Pink, mix White and Carmine.

For Silver Gray, mix Indigo and Lamp-Black.

For Lead Color, mix White and Lamp Black.

For Chocolate, mix Black and Venetian Red.

For Green, mix Blue and Yellow.

For Bright Green, mix White and Green.

For French White, mix Purple and White.

For Dark Green, mix Light Green and Black.

For Pea Green, mix White and Green.

For Brilliant Green, mix White and Emerald Green.

For Orange, mix Red and Yellow.

For Pearl Gray, mix White, Blue and Black.

For Flesh Color, mix White, Lake and Vermilion.

For Drab, mix Umber, White and Venetian.

For Cream, mix White, Yellow and Venetian.

For Olive, mix Red, Blue and Black.

For Buff, mix Yellow, White, and a little Venetian.

HARMONIOUS COLOR CONTRASTS.

The following list of harmonious colors will be found very useful in selecting wall paper decoration or colors for any purpose.

Red with Green.
Blue with Orange.
Yellow with Violet.
Black with Warm Brown.
Violet with Pale Blue.
Violet with Light Rose.
Deep Blue with Golden Brown.
Chocolate with Light Blue.
Deep Red with Gray.
Maroon with Warm Green.
Deep Blue with Pink.
Chocolate with Pea Green.
Maroon with Deep Blue.
Claret with Buff.
Black with Warm Green.

KOLA SYRUP.

No. 1. The Flavoring.

Cologne spirits or good clean alcohol	72	ounces.
Extract of vanillin	1¼	ounces.
Oil of lemon	1¼	ounces.
Oil of sweet orange	¾	ounce.
Oil of limes	3	drams.
Oil of cassia	¼	ounce.
Oil of nutmegs	3	drams.
Oil of neroli	20	drops.

Mix and let stand for two days before using.

No. 2. The Body.

Caffeine alkaloid	8	ounces.
Fluid Ext. of kola nut	16	ounces.
Fluid Ext. of coca leaves	4	ounces.
Glycerine	64	fl. ounces.
Acid phosphoric 85 per cent	1	pound.
Lime juice special	25	ounces.

No. 3. The Lime Juice Special for Kola.

Oil of limes..... 1 ounce.
Oil of patchouli..... ½ dram.
Carbonate of magnesia.... 2 ounces.
Citric acid ..... 1 ounce.
Water sufficient to make..128 ounces.

Directions for making No. 2. The Body. Dissolve the caffeine alkaloid in 64 ounces of boiling water, to this add 75 ounces of cold water and the glycerine. Mix the lime juice special with the fluid extracts. Filter with a little magnesia and add to the caffeine compound. Then add the one pound of phosphoric acid and 24 ounces of the No. 1 Flavoring. This is the completed extract.

To make the syrup of kola take 12 ounces of extract and 5 ounces of burnt sugar coloring to each 128 fluid ounces of simple syrup.

Directions for making No. 3, the Lime Juice Special. Place the magnesia in a mortar or granite bowl. Drop on the oils. Rub into a thin cream with water. Let stand for 12 hours. Place in filter and run water through until the filtrate measures 128 ounces. In this dissolve the citric acid. Be careful in the quantity and quality of your oil of patchouli. It is not always of uniform strength. I have by experience found that one-half dram of patchouli to the gallon of lime juice special is approximately correct.

Breath Perfumes, Cachous Frangipanni.

Saccharin ..... 5 grains.
Artificial musk ..... 5 grains.
Vanillin .....25 grains.
Oil of cassia..... 3 drams.
Oil of cloves .....30 drops.
Oil of cardamom .....25 drops
Oil of peppermint..... 5 drops.
Tartaric acid .....30 grains.
Licorice, powdered ..... 1 ounce.
Gum arabic, powdered..... 1 ounce.
Boric acid .....30 grains.
Sugar, powdered ..... 8 ounces.

Mix the oils and drop on the sugar. Powder the saccharin, artificial musk, vanillin, boric acid and tartaric acid and add to the mass. Then add the powdered licorice and gum arabic. Mix well and sift the whole three times to obtain thorough uniformity. Make into a stiff mass with a mixture of two parts of gum arabic mucilage and 10 parts of water. Roll out flat on a marble slab (see lozenges), and with a suitable die make into small lozenges or pipe and make into 1 grain pills, plain or silver coated.

Breath Perfumes, Cachous Violet.

Artificial musk ..... 5 grains.
Saccharin .....10 grains.
Ionone ..... 1 dram.
Powdered orris root, best.. 1 ounce.
Powdered gum arabic.....¼ ounce.
Powdered boric acid.....30 grains.
Powdered sugar .....12 ounces.

Purple color q. s. to make a violet shade.

Mix the ionone with the orris root, sugar, boric acid and gum arabic. Powder the musk and saccharin and add with the tartaric acid. Then mix well and sift the whole three times to obtain a uniform mixture. Your success in this line depends on a perfect mixing.

Make into a stiff mass with a mixture of two parts of gum arabic mucilage and ten parts of rose water. Roll out flat and thin on a marble slab (see lozenges) and with a confectioners lozenge cutter make into heart or triangular shaped lozenges. If you intend making large quantities, mix your drugs yourself and give a manufacturing confectioner instructions as to size and shape, he will do the work better than you can. First, however, make a small batch yourself and if

there are any changes that you would wish in the flavor or sweeetness, you can modify the formula.

Walnut Juice (So-called) Hair Dye.

For the No. 1 Bottle.

Para-phenylenediamine,
Merck & Co..... 1 ounce.
Distilled water .....32 ounces.
Alcohol .....16 ounces.

Dissolve.

Put into 2-ounce bottles, label No. 1.

For the No. 2 Bottle.

Peroxide of hydrogen.

Put into 2-ounce bottles, label No. 2.

Directions: Wash the hair well with a solution of one ounce of sal soda dissolved in 16 ounces of hot water. When the grease is removed from the hair, rinse well with cold water and dry. Then for black place in a clean saucer two tablespoonfuls of No. 1 and 1 tablespoonful of No. 2. For dark brown add to the above 1 tablespoonful of water. For light brown, 2 tablespoonfuls of water. Chestnut, 3 tablespoonfuls of water, and for lighter shades, 4, 5 or 6 tablepoonfuls of water, down to the very lightest shades.

This dye may do for the moustache and whiskers, but it is objectionable for general use. It is stated in the Journal of the American Medical Association, April 3, 1909, that preparations of para-phenylène-diamine "sometimes develop cutaneous eruptions of the scalp, with intolerable itching and more or less violent headache. It has been known to produce swelling of the limbs and bloating of the face. These symptoms are quite variable in their severity and in many instances are so slight that their significance remains unrecognized."

Massage Cream.

The casein moist can be obtained in the form of white cheese (schmier kase) and is for sale in dairies in large towns.

Take of the casein moist.. 16 ounces.
Glycerine .....3 to 4 fl. ounces.
Boric acid in powder.....180 grains.
Tincture of orris root..... ¼ ounce.
Ionone, 10 per cent..... 1 dram.
Aniline red, soluble in
spirit ..... ¼ grain.

Heat the glycerine and in it dissolve the boric acid. Work well into the casein and add the perfume in which has been dissolved the aniline red. An ordinary hand paint mill is useful in working the mass. The amount of glycerine has to be determined by the amount of moisture in the casein.

When you have to make your own casein, take skimmed milk, any quantity desired, add a little rennet and let stand in a warm place until it becomes thick. Place in a cheese cloth and wash free from acid. Hang it up to become partially dry, say until next day. While the casein is still moist add a mixture of boroglyceride to bring the cream to the proper consistence. The boroglyceride for this preparation is made by dissolving with the aid of heat two ounces of boric acid in eight fluid ounces of glycerine. Perfume and color as directed. In the absence of rennet, ordinary vinegar, one ounce to the gallon of skimmed milk, with the aid of 95 to 100 F. temperature, will do the business. It is only good, old schmier kase after all, washed free from acid, with a perservative and perfume added.

Kreosote and Heroin Compound.

An Easy Method of Making.

Creosote, beechwood. 1½ fl. ounces.
Alcohol .....64 fl. ounces.

Terpin hydrate .... 2 ozs. 149 grs.
Heroin hydrochloride .....42 2-3 grains.
Eucalyptol ..... ½ ounce.
Glycerine, hot .....32 fl. ounces.
Syrup simple .....16 fl. ounces.
Elixir simple .....16 fl. ounces.

Color q. s. to make a pale sherry color.

Dissolve the terpin hydrate in the hot glycerine and let cool.

Dissolve the heroin in 4 ounces of the alcohol and add to the terpin hydrate solution.

Dissolve the creosote and eucalyptol in 4 ounces of alcohol and stir well into the mixture, taking care to add slowly.

Mix the remainder of the alcohol, the elixir and syrup together and add to the preceding.

Each dram represents terpin hydrate, 1 grain; heroin hydrochloride, 1-24 grain; creosote about 7-10 grain.

Perspiration Deodorant.

Alum, lump .....10 ounces.
Soda carbonate (Sal Soda).10 ounces.
Ammonium muriate ..... 2 ounces.
Zinc chloride ..... 1 ounce.
Sodium chloride (common salt) ..... 2 ounces.
Boric acid, powdered..... 2 ounces.
Borax, powdered ..... 2 ounces.
Tincture of orris root..... 4 ounces.
Ionone, 10 per cent solution..1 dram.

Color as desired.

Muriatic acid commercial.

Water of each, sufficient.

Dissolve the alum in 64 ounces of boiling water. Then add the soda. This will precipitate the aluminum hydrate. Add muriatic acid sufficient to dissolve the precipitate formed. Dissolve the ammonium muriate, sodium chloride and zinc chloride in 64 ounces of water and add to the first solution. Add the tincture of orris root and ionone to the borax and boric acid. Rub in a mortar with half pint of water. Place in a filter paper in glass funnel and run water through until 128 ounces are obtained. Add this to the finished product, which should measure 256 ounces or two gallons. For violet color use purple aniline soluble in water, or red or green colors may be used. You may also vary the perfume to suit. See perfumery formulas.

Maple Syrup Flavor.

Ground malt ..... 7 ounces.
Ground fenugreek seed.... 1 ounce.
Ground roasted coffee, good quality ..... 2 ounces.
Boiling water .....24 ounces.
Vanillin extract, 1 to 128.. 2 ounces.
Alcohol ..... 6 ounces.
Water, cold .....sufficient.

Place the ground malt, fenugreek and ground coffee in a jar or graniteware vessel. Pour on the boiling water and let infuse with a gentle heat, not over 100 F., for four hours. Allow it to cool and then add the 6 ounces of alcohol. Let this macerate for 24 hours. Then percolate in a glass percolator and when the liquid ceases to drop run water through the percolator until thirty-two ounces of percolate are obtained. To this add the 2 ounces of vanillin extract. Two ounces of this extract will flavor 10 galons of thin simple syrup.

FORM OF GUARANTEE, APPLICATION FOR SERIAL NUMBER.

To the Honorable the Secretary of Agriculture.

Washington, D. C.

We (or I), the undersigned, do hereby guarantee that the articles of food or drugs manufactured, packed, distributed or sold by us (or me), to-wit, "Sal-Santol, Drivapain, Restabit,

Doitall, etc., etc.," (mentioning) and any and all medicines and preparations made by us (or me) or recognized in the United States Pharmacopeia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation or prevention of disease of either man or animals, are not adulterated or misbranded within the meaning of the Food and Drugs Act, June 30, 1906.

DOITALL CHEMICAL CO.
Per John Doe, President.
(if incorporated.)

JAMES SMITH.
(if individual.)

JAMES SMITH & CO.
Per James Smith.
(if partnership.)

(Signature has to be witnessed by notary.)

(NOTARY FORM.)

State of ....
City of.....} ss.

Be it known that on the ..... day of ....., 191.., personally appeared before me, a notary public (or justice of the peace), in and for the City of ..... (or County), State of ....., John Doe, President (if corporation), of the Doitall Chemical Co., a corporation authorized under the laws of the State of .... (or James Smith) and acknowledged that he signed the foregoing instrument in writing and for the purposes stated in this instrument.

.....
Notary Public (or J. P.)

My term expires.....

Guarantee Label.

Guaranteed under the Pure Food and Drugs Act, June 30, 1906, by the John Doe Chemical Co. Serial No. 99999.

NUMERALS.

Cardinals.

Unus	One.
Duo	Two.
Tres	Three.
Quatuor	Four.
Quinque	Five.
Sex	Six.
Septem	Seven.
Octo	Eight.
Novem	Nine.
Decem	Ten.
Undecim	Eleven.
Duodecim	Twelve.
Tredecim	Thirteen.
Quatuordecim	Fourteen.
Quindecim	Fifteen.
Sexdecim	Sixteen.
Septemdecim	Seventeen.
Octodecim or duo de viginti	Eighteen.
Novemdecim or un de viginti	Nineteen.
Viginti	Twenty.
Viginti unus or unus et viginti	Twenty-one.
Triginta	Thirty.
Quadraginta	Forty.
Quinquaginta	Fifty.
Sexaginta	Sixty.
Septuaginta	Seventy.
Octoginta	Eighty.
Nonaginta	Ninety.
Centum	One hundred.

Ordinals.

Primus	First.
Secundus	Second.
Tertius	Third.
Quartus	Fourth.
Quintus	Fifth.
Sextus	Sixth.
Septimus	Seventh.
Octavus	Eighth.
Nonus	Ninth.
Decimus	Tenth.
Undecimus	Eleventh.
Duodecimus	Twelfth.
Tertius decimus	Thirteenth.
Quartus decimus	Fourteenth.
Quintus decimus	Fifteenth.

Sextus decimus.....	Sixteenth.
Septimus decimus.....	Seventeenth.
Octavus decimus.....	Eighteenth.
Nonus decimus.....	Nineteenth.
Vicesimus	Twentieth.
Vicesimus Primus.....	Twenty-first.
Tricesimus	Thirtieth.
Quadragesimus	Fortieth.
Quinquagesimus	Fiftieth.
Sexagesimus	Sixtieth.
Septuagesimus	Seventieth.
Octogesimus	Eightieth.
Nonagesimus	Ninetieth.
Centesimus	Hundredth.

NOMENCLATURE.

(From Scoville's Art of Compounding.)

The temptation to physicians to abbreviate in writing prescriptions makes it necessary that the pharmacist should be thoroughly conversant with chemical nomenclature, particularly in regard to those bodies which are most frequently prescribed as remedies.

A salt or chemical may be known by several names—its trade or common name, its Latin or scientific name and in many cases also by a technical or descriptive name.

The common or trade name may have been derived from the names of those who first brought them into notice, as Glauber's or Seignette's salt, or from the place from which they were first obtained, as Epsom or Rochelle salt. The Latin or scientific names designate in a general way the chemical composition of the bodies, and when there are a number of salts or bodies which contain the same elements, but in different proportions, more definite descriptive names may be applied to them to avoid confusion.

Thus, "chloride of mercury" may mean either calomel or corrosive sublimate, but the terms, "mild chloride of mercury" and "corrosive chloride of mercury," "protochloride of mercury" and "bichloride of mercury" are definite and cannot be confused.

The first of these terms gives a general idea of the salt—composed of mercury and chlorine; the second distinguishes between the medicinal and physical action of two chlorides which exist, one being "mild" and the other "corrosive;" the third of the terms also distinguishes between the two chlorides, one being the "proto" (first or lowest) chloride, and the other the "bi" (second or higher) chloride.

Unfortunately, no one system of nomenclature is satisfactory for all, and much confusion may arise unless the dispenser understands the principles which underlie each system. A single body may have several trade names, and the Latin title may be thought too long.

The third system attaches certain prefixes or suffixes to the negative (acid) term, which have a constant meaning, and thus distinguish the salt clearly from others of a similar composition. This method may be used for all definite chemical compounds, but if carried out in some cases, ridiculously long words would result, and thus it is not always practical, although very convenient in many cases.

The prefixes and terminations in general use are as follows:

PREFIXES.

Mono (Gr. monos, one). Proto (Gr. protos, first).

These are employed to designate a single atom or molecule of acid radical in combination with a base, or the first or lowest number of a series, when more than one proportionate combination is known. Before the names of radicals beginning with a vowel the final o of these is generally omitted for the sake of euphony.

Examples.—PbO, Lead monoxide. FeO, Iron monoxide, or protoxide. Fe Cl_2, iron protochloride (not monochloride).

Sesqui (Lat. sesqui, one-and-a-half) meaning three atoms or molecules of acid radical to two of basic (since chemistry does not admit of splitting atoms), the ratio being one to one-and-a-half.

Examples.—Fe_2O_3 Iron sesquioxide Fe_2Cl_6 is sometimes called sesquichloride—the chloride of the sesquioxide). Al^2 O_3 Aluminum sesquioxide.

Bi, or Bin (Lat. Bis, twice), Di (Gr. dis, twice), Deuto (Gr. deuteros, second), meaning two, or double, where two molecules of acid radical are combined, or twice as many molecules as there are of the basic radical. Di has also been used to refer to the basic radical in a similar way.

Examples.—$HgCl_2$ mercury biniodide, or deuto iodide, CS_2 Carbon disulphite ($Pb_2O(C_2H_3O_2)_2$ Lead diacetate).

Ter (Lat. ter, three). Tri (Gr. tria, three). Three atoms, or molecules of the basic radical.

Examples.—Au Cl_3 gold terchloride. Fe_2O_3 iron trioxide. As_2O_3 arsenic trioxide. $Fe_2(SO_4)_3$ iron tersulphate.

Quadra (Lat. quatuor, or quadrus, four). Tetra (Gr. tetratos, fourth), meaning four atoms, or molecules, of acid radical.

Examples.—$SnCl_4$ tetra, or quadrachloride, of tin. $PtCl_4$ tetra-chloride of platinum.

Penta (Gr. penta, five). Quinque (Lat. quinque, five), meaning five.

Examples.—PCl_5 Phosphorus pentachloride.

Hexa (Gr. hexa, six). Sex(t) (Lat. sex, six), meaning six.

Examples.—SI_6 sulphur hexaiodide.

Hepta (Gr. hepta, seven). Sept (Lat. septa, seven), meaning seven.

Examples.—Cl_2O_7 chlorine heptoxide.

Poly (Gr. pollos, or polu, many), meaning many equivalents—usually when the exact formula is in doubt, as poly-iodides, many atoms (above three) of iodine combined with a base, etc.

Sub (Lat. sub, under). Hypo (Gr. hupo, under, or Lat. hypo, after). Sub refers to the base, and is used to designate salts which are composed of an oxide and another acid radical in varying proportions, or the so-called basic salts. Thus sub-acetate of lead is a combination of lead oxide PbO and lead acetate $Pb(C_2H_3O_2)_2$. Sub-sulphate of iron is an oxy or basic sulphate, approximating $Fe_2O(SO_4)_2 + Fe_2(SO_4)_3 = Fe_4O(SO_4)_5$. Bismuth subnitrate Bi O NO_3 (approximately). Most of these salts vary in composition, hence their formulas are not included in the Pharmacopœia.

The term hypo refers to the acid radical, and usually indicates the lowest of a series of oxyacid salts.

Examples.—KClO potassium hypochlorite.

KH_2PO_2 potassium hypophosphite.

Per (Lat. per, above). Hyper (Gr. hyper, above). Super (Lat. super, above). The contracted form per is mostly used, and indicates the highest of a series of compounds, as contracted with sub and hypo.

It is used mostly with oxy acids; when it refers to those containing the largest number of atoms of oxygen, the culmination of a series.

Examples.—$KClO_4$ perchlorate of potassium. H_2O_2 peroxide of hydrogen. Fe_2Cl_6 perchloride of iron.

Ortho (Gr. orthos, straight). Used to distinguish substances in a normal condition from a modified form of the same, or from others which have been derived from them by heat or other causes.

Example.H_3PO_4 Orthophosphoric acid.

Pyro (Gr. pur, fire). Used to designate that the body has been produced by heat (fire). Thus $2H_3PO_4$, or $H_6P_2O_8$+heat becomes $H_4P_2O_7$, pyrophosphoric acid, water (H_2O) being driven out.

$C_7H_6O_5$, gallic acid, heated, becomes $C_6H_6O_3$ pyrogallic acid, CO_2 being driven out.

Meta (Gr. meta, beyond). Used to designate an altered condition, as distinguished from the ortho and pyro (and para) forms.

Thus, $H_4P_2O_7$+heat becomes $2HPO_3$ metaphosphoric acid, water being driven out.

(The terms ortho, pyro and meta, as applied to inorganic compounds, usually distinguish between forms produced by heat or similar causes).

Para (Gr. para, from beside, near to, about, etc.) Used with organic compounds, when three bodies having the same chemical composition, but differing in physical properties (solubility, melting and boiling points, etc.) and certain chemical and medicinal properties, are to be distinguished. Such cases are differentiated by the terms ortho, meta, and para.

Examples.—$C_2H_4(OH)_2$ Ortho-dihydroxy-benzol or pyrocatechin.
$C_2H_4(OH)_2$ Meta-dihydroxy-benzol or resorcin.
$C_2H_4(OH)_2$ Para dihydroxy-benzol or hydrochinon.

Para also designates molecular aggregations of certain organic compounds, as C_2H_4O—aldehyde and $(C_2H_4O)_3$ or $C_6H_{12}O_3$ par aldehyde.

Hydro (Gr. hudor, water), used to designate the binary acids, i. e., those composed of only two elements, the prefix referring then to the hydrogen. as HCl, hydro-chloric acid, H_2S hydro-sulphuric acid.

An (Lat. an, without). De (Lat. de, away from), meaning without or deprived of. Used to denote something which has been removed, therefore, implying that the removed substance usually exists in the body normally.

Examples.—An hydrous, without water (or moisture).
De odorized, deprived of odor.

TERMINATIONS.

Ide, Id, *Uret.—Terminations used with salts composed of a base united to a single element or with cyanogen, as an acid radical, the latter being used mostly with sulphur, phosphorus and cyanogen.

Examples.—KI, potassium iodid(e)
K_2S, potassium sulphid(e), or sulphuret, sulfid.
KCN, potassium cyanid(e), or cyanuret.
H_2S, sulphuretted hydrogen, or hydrogen sulphid(e).
H_4P, phosphuretted hydrogen.

Ous, Ite.—When a series of acids differ only in the proportion of oxygen which they contain, the lower members of the series end in ous and the salts of these in ite.

Ic, Ate.—The highest members of such a series of acids, or those which contain the most oxygen, end in ic, and the salts of these in ate.

Examples.—H_2SO_3, sulphurous acid, K_2SO_3 potassium sulphite.
H_2SO_4, sulphuric acid, K_2SO_4 potassium sulphate.

The following series well illustrates the use of some of these prefixes and terminations:

HCl, hydro-chlor-ic acid. KCl, potassium chloride.

HClO, hypo-chlor-ous acid. KClO, potassium hypo-chlor-ite.

$HClO_2$, chlor-ous acid. $KClO_2$, potassium chlorite.

$HClO_3$, chlor-ic acid. $KClO_3$, potassium chlor-ate.

$HClO_4$, per-chlor-ic acid. $KClO_4$, potassium per-chlor-ate.

Oid (Gr. eidos, resemblance), used to express similarity in character and properties (not in composition).

Examples.—Alkaloid, resembling an alkali.
Crystalloid, resembling a crystal.
Resinoid, resembling a resin.

Ine, In.—In the Pharmacopoeia these terminations are used to distinguish between alkaloids and other proximate principles. All alkaloids end in ine; Latin, ina; while glucosides, neutral principles, etc., end in in; Latin, inum.

Examples.—Morphine. Latin, Morphina.
Quinine. Latin, Quinina
Picrotoxin. Latin, Picrotoxinum.
Santonin. Latin, Santoninum.

*The latest nomenclature prefers the termination id, and also substitutes f for ph in many cases, as sulfur, fosfate, etc.

Inhalants for Catarrh. A

Fluid tolu soluble..... 1 ounce.
Iodine tincture..... 1 ounce.
Fluid extract cubebs..... 1 ounce.
Spirits of camphor..... 1 ounce
Carbolic acid crystals..... 1 ounce.
Alcohol .....32 ounces.
Glycerine .....12 ounces.

Mix the alcohol, tincture of iodine, spirits of camphor, fluid extract cubebs and carbolic acid together in the order mentioned; add the fluid tolu and glycerin.

Inhalant for Catarrh. B

Beechwood creosote..... 3 drams.
Pinus pumilio oil..... 5 drams.
Eucalyptol ..... 4 drams.
White petrolatum oil, to make .....16 ounces.
Mix.

See also Bergoline Oil Spray, which is as good and by many considered best.

Orangeadine.

Orange extract soluble.....8 ounces.
Tartaric acid .....1 ounce.
Water .....8 ounces.
Simple syrup .....7 Pints.

Dissolve the acid in the water and add to the syrup. Then add the soluble orange extract. Always use a good fresh oil of orange. The addition of the juice of four oranges in which the peels have been grated and heated to the boiling point, then filtered when cold and added to the syrup improves the flavor. Some prefer 1½ ounces of tartaric acid, and some compounders prefer to use citric acid. The orangeadine should be colored with some harmless yellow coloring, combined with a dash of burnt sugar coloring.

Complexion Cleanser. A

Peroxide of hydrogen.....1 ounce.
Glycerine .....1 ounce.
Water .....8 ounces.
Mix and add

Alcohol ..... 4 ounces.
Corrosive sublimate ..... 4 grains.
Acid nitric dilute.....¼ ounce.
Orange flower water..... 2 ounces.
Color as desired.

Complexion Cleanser. B

Alum powdered .....¼ ounce.
Benzoic acid .....½ dram.
Tincture gum benzoin..... 1 dram.
Water ..... 8 ounces.
Mix.

Complexion Cleanser. C

Sulphate of magnesia....½ ounce.
Powdered borax ..... 1 dram.
Glycerine .....½ fl. ounce.
Water .....5½ ounces.
Rose water ..... 2 ounces.
Mix.
Color pink and filter.

Complexion Cleanser. D

Sulphocarbolate of zinc.. 1 dram.
Oxide of zinc C. P.....¼ ounce.
Milk of sulphur.....¼ ounce.
Glycerine ..... 1 fl. ounce.
Rose water ..... 4 ounces.
Water q. s. to make....16 ounces.
Mix.

Baby Powder. A

Powdered starch ..... 3 pounds.
Powdered Florentine orris root .....½ pound.
Oil of bergamot ..... 1 dram.
Ionone 10 per cent..... 1 dram.
Mix.

Baby Powder. B

Powdered starch ..... 3 pounds.
Powdered Florentine orris root .....½ pound.
Powdered talc, fine quality 3 pounds.
Oil of orange, sweet..... 1 dram.
Oil of neroli..... 1 dram.
Mix.

Baby Powder. C

Powdered starch ..... 1 pound.
Powdered boric acid..... 2 ounces.
Powdered talc, fine quality ½ pound.
Oil of bergamot ..... 1 dram.
Artificial musk ..... 5 grains.
Vanillin .....10 grains.
Coumarin ..... 5 grains.
Powder the musk vanillin and coumarin. Drop the oil on the powdered talcum. Mix well.

Face Powders. A

Zinc oxide, pure ..... 2 pounds.
Talcum powder, fine..... 2 pounds.
Precipitated chalk .....½ pound.
Powdered orris root .....½ pound.
Ionone, 10 per cent ..... 1 dram.
Mix.

Face Powders. B

Talcum powder, fine..... 2 pounds.
Zinc oxide, pure..... 1 pound.
Starch, powdered .....½ pound.
Powdered orris root.....¼ pound
Ionone, 10 per cent.....½ dram.
Mix.

Face Powders. C

Bismuth oxychloride ..... 1 pound.
Talcum powder, fine..... 4 pounds.
Chalk precipitated ..... 1 pound.
Artificial musk .....10 grains.
Oil of bergamot ..... 2 drams.
Oil of neroli ..... 1 dram.
Mix.

Face Powders. D

Bismuth subcarbonate .... 1 pound.
Starch, powdered ..... 4 pounds.
Chalk precipitated ..... 4 pounds.
Talcum powder, fine..... 4 pounds.
Zinc Oxide, pure..... 1 pound.
Oil of bergamot ..... 2 drams.
Tincture of orris root..... 2 ounces.
Ionone, 10 per cent.....½ ounce.
Mix.

Face Powders. E

Magnesium carbonate .... 2 pounds.
Bismuth subcarbonate .... 1 pound.
Zinc oxide, pure ..... 3 pounds.

Talcum powder, fine ..... 6 pounds.
Oil of bergamot .....¼ ounce.
Tincture of orris root..... 3 ounces.
Ionone, 10 per cent.....½ ounce.
Mix.

All toilet powders should be well mixed. Large quantities should be mixed in a mixing machine. Small quantities may be mixed fairly well in a Hunter sifter and mixer by first mixing the different ingredients on a large sheet of smooth paper and then running through the mixer two or three times. Pink powders may be produced by dropping a solution of carmine on the powder before mixing —or burnt umber fine or yellow ocher fine may be used to tint the powders for brunettes.

Face Tablets.

Precipitated chalk ..... 1 pound.
Talcum powder ..... 1 pound.
Ionone ,10 per cent.....½ dram.
Mix.

Mucilage of starch and water sufficient.

Make a mucilage of starch, 1 ounce; boiling water sufficient to make into a mucilage. Take two ounces of the mucilage. Add to six ounces of water and make the mixed powders into a stiff paste and placed in suitable molds to dry. Any of the face powders may by this method be changed into the tablet form.

Manicure Powder. A

Oleate of tin, powdered.... 1 pound.
Powdered pumice stone ...11 ounces.
Powdered talcum, fine .... 1 ounce.
Otto of rose .....20 drops.
Soluption of carmine..... 1 dram.
Mix and sift well through a very fine sieve.

Manicure Powder. B

Putty powder .....16 ounces.
Tincture of orris root.....¼ ounce.
Ionone, 10 per cent.....½ dram.
Solution of carmine sufficient.
Mix well.

Finger Tip Coloring.

A simple solution of aniline, red (spirit soluble) in alcohol, perfumed with white rose, violet or any suitable perfume.

Nail Polisher. A

Oleate of zinc..... 1 ounce.
White petrolatum ..... 4 ounces.
Otto of rose or oil of neroli or bergamot ..... 5 drops.
Mix.

Nail Polisher. B

Talcum powder, fine ..... 1 ounce.
White wax ..... 1 ounce.
White Petrolatum ..... 3 ounces.
Oil of neroli petale .....10 drops.
Melt the wax and petrolatum. When cool stir in the talcum and the oil of neroli.

Razor Paste. A

Emery, finely powdered .. 2 ounces.
Plumbago, finely powdered. 2 ounces.
White wax ..... 1 ounce.
White petrolatum ..... 4 ounces.
Melt the wax and petrolatum. Sift in the powders and mix well.

Razor Paste. B

Emery, finely powdered.... 2 ounces.
Jewelers' rouge ..... 2 ounces.
White wax ..... 1 ounce.
White petrolatum ..... 4 ounces.
Melt the wax and petrolatum. Sift in the powders and mix well.

Shaving Powder.

Powdered white castile soap.16 ounces.
Powdered talcum powder, fine ..... 1 ounce.

Powdered borax ..... 1 ounce.
Powdered boric acid .....¼ ounce.
Powdered menthol ..... 1 dram.

Toilet Vinegar.

Oil of cloves.....⅛ ounce.
Oil of orange.....⅛ ounce.
Oil of bergamot.....⅛ ounce.
Oil of lavender.....⅛ ounce.
Oil of cassia .....⅛ ounce.
Cologne spirits, 188 per cent .....16 ounces.
Acid acetic, 60 per cent....16 ounces.

Water, warm, sufficient to make 64 ounces. Mix the oils and the cologne spirits. Add the acetic acid. Set aside for 24 hours. Then add warm water, a small portion at a time (agitating the liquid each time the warm water is added) until the whole measures 64 ounces. A little sugar coloring improves the appearance.

Pilocarpine Pomade (Whitla.)

Pilocarpine hydrochloride..20 grains.
Water distilled .....¼ ounce.
Mix and add
Lanoline .....1¼ ounce.
Petrolatum oil, white .....¾ ounce.
Oil of bergamot .....½ dram.
Oil of verbena .....½ dram.
Mix.

Spirit Gum for Attaching Artificial Mustaches and Beards.

White rosin ..... 2 ounces.
Balsam tolu .....½ ounce.
Castor oil ..... 1 ounce.
Alcohol ..... 4 ounces.
Bergamot oil .....10 drops.

Dissolve the rosin and balsam of tolu in the alcohol and add the bergamot.

Artificial Koumyss.

Skimmed milk .....64 ounces.
Water .....24 ounces.
Compressed yeast ..... 1 cake.
Granulated sugar ..... 8 ounces.

Dissolve the sugar in the water. Rub the yeast into a smooth liquid with a portion of the milk, then mix all the ingredients and set aside near a stove, keeping the temperature at about 80 F. for about 8 hours, or until bubbles appear. Strain and bottle. Tie the corks. Lay the bottles down in a cool place. It will be ripened and ready to drink in from 4 to 6 days.

Rum Shrub.

Juice of fresh oranges, filtered .....24 ounces.
Jamaica rum .....64 ounces.
Granulated sugar .....32 ounces.
Mix.

Makes a good rum punch with the addition of water, hot or cold. The less water added the better will be the punch.

Walnut Catsup.

Green walnuts .....12 dozen.
Cloves, ground .....½ ounce.
Ginger, ground .....½ ounce.
Nutmegs, ground .....¼ ounce.
Mace, ground ..... 1 ounce.
Pepper, black, ground..... 2 ounces.
Boil the whole in vinegar..128 ounces.
Let boil for an hour.
Add salt ..... 8 ounces.

Let stand for a week and strain through cheese cloth.

Celery Vinegar.

Celery seed, bruised..... 5 ounces.
Salt ..... 1 ounce.
Vinegar .....128 ounces.

Macerate for 30 days. Decant the clear portion and filter the residue.

Anchovy Paste.

Anchovies ..... 1 pound.
Cayenne pepper ..... 1 dram.

Vinegar .....16 ounces.
Salt ..... 2 ounces.

Boil for 10 minutes. Rub through a sieve. Add butter, 8 ounces. An excellent relish on toast or may be made into sandwiches.

Ant Poison.

Petrolatum oil .....128 ounces.
Napthalin ..... 6 ounces.

Dissolve the naphthalin in the oil. Apply to places infested by the ants. They will quickly disappear.

Washing Liquid Cheap.

Yellow soap ..... 8 ounces.
Turpentine ..... 8 ounces.
Sal soda .....16 ounces.
Water .....160 ounces.

Shave the soap and dissolve in 64 ounces of water, boiling. Take a pint of this and saponify the turpentine. Dissolve the sal soda in the remainder of the water, hot, and add.

Labarraque Water.

Chloride of lime..... 5 ounces
Sal soda ..... 12 ounces.
Water .....160 ounces.

Add the chloride of lime to half the water. The sal soda to the other half and when dissolved mix the two solutions.

Glass Polisher.

Calcined magnesia ..... 1 ounce.

Make into a paste with benzine and add aqua ammonia, strong, 1 ounce.

Non-Poisonous Fly Paper.

Quassia chips ..... 8 ounces.
Black pepper ..... 2 ounces.
Sugar ..... 4 ounces.
Water .....64 ounces.

Boil altogether for 30 minutes. Strain. In this solution dip blotting paper and let dry. Then place one of the blotters in a saucer with enough water to keep the blotter well wetted.

Liquid Egg Shampoo.

Soft soap ..... 2 ounces.
Borax, powdered ..... 1 ounce.
Crude pyroligneous acid ...16 ounces.
Rose water ..... 8 ounces.
Yolks of egg..... 2
Glycerine .....3 fl ounces.

Bath Powders.

Sal soda, powdered..... 8 ounces.
Borax, powdered ..... 8 ounces.
Ionone, 10 per cent.....½ dram.

Calcidin.

(From the report of the Chemical Laboratory of the American Medical Association.

	Per cent.
"Available" iodin (liberated on acidulation)	9.20
Calcium iodid (CaI_2).....	5.71
Calcium oxid (CaO).....	18.45
Calcium carbonate ($CaCo_3$)	34.45
Corn starch (anhydrous).....	16.13
Iron and aluminum .....Traces	
Magnesium oxid (MgO)	.35
Water (by difference)	15.71
	100.00

In other words, we conclude that calcidin is essentially a mixture of iodin, calcium iodid, lime and corn starch and that the preparation is made by mixing ordinary iodin, lime and corn starch, the calcium iodid and some calcium iodate being formed by the action of the lime on the iodin in the presence of moisture. The exact amount of calcium iodid found in different specimens of calcidin will vary in accordance with the amount of

moisture present and the age of the product.

While it is claimed that calcidin produces "therapeutic effects entirely different from those obtained from iodin in any other form," in reality the introduction of calcidin into the acid stomach contents results in such chemical changes that it corresponds to giving iodin, calcium iodid and calcium chlorid, each 65 mg. (1 grain) of calcidin being equal to about 6 mg. (1-10 grain) iodin, 4 mg. (1-15 grain) calcium iodid and 50 mg. (4-5 grain) calcium chlorid.

As a comparison, the average dose of liquor iodi compositus, U. S. P. (Lugol's solution) is 0.2 c.c. (3 min.), and these 3 minims contain 10 mg. (1-6 gr.) of iodin. The dose of calcidin is given as 1-3 to 2 grains, and this will contain 1-30 to 1-5 of a grain of iodin. In other words, the full dose (2 grains) of calcidin contains a little less iodin than 3 minims of Lugol's solution.

CALCIDIN TABLETS.

Having in mind past experiences, where proprietary preparations put up in different forms have differed more or less in composition, sometimes to the extent that the different forms resembled each other in name only, and also realizing the difficulty of making a mixture of lime and iodin into tablets without serious decomposition, the examination of calcidin tablets was taken up.

This examination demonstrated the fact that calcidin tablets do not have the same composition as calcidin itself, but instead are essentially tablets of calcium iodid. While 1 grain of calcidin is equal to 1-10 grain of iodin, 3 calcidin tablets, which represent 1 grain of calcidin, are equivalent to but 7-83 grain iodin. While the recommended dose of calcidin itself will contain 1-30 to 1-5 grain of iodin, the same amount given in the form of calcidin tablets is equivalent to only 1-250 to 1-40 grain iodin.

The analysis shows that the attempt to produce calcidin tablets was a failure because of the tendency of iodin to react with bases to form iodates and the tendency of the iodates to decompose with formation of iodids, which facts are well known to chemists.

The details of the analysis are given below:

ANALYSIS OF CALCIDIN TABLETS.

2. A one-ounce package of 1-3 grain calcidin tablets was purchased in the open market and the available and total iodin content of the tablets determined.

"Available" Iodin.—The method of estimating available iodin adopted in the analysis of calcidin did not work because of difficulty in filtration, and method (a) was used. Fifty tablets were triturated with water, the mixture was acidulated with hydrochloric acid and the liberated iodin determined with sodium thiosulphate. The end point was not sharp, but less than 1 c.c. of tenth-normal sodium thiosulphate V. S. was consumed, equivalent to .01259 gm. iodin; hence each tablet contains not more than .00025 gm. (1-250 grain) "available" iodin.

Total Iodin.—(a) Fifty tablets were fused with potassium hydroxid. The residue, treated as outlined for the estimation of total iodin in calcidin, required 12.2 c.c. tenth-normal sodium thiosulphate. V. S., indicating .1536 gm. iodin, or .0030 gm. iodin per tablet.

(b) Fifty tablets were mixed with 2 gm. potassium hydroxid and 5 c.c. water, evaporated to dryness and ignited. In this residue the total halogen content was determined gravimetrically, as outlined under calcidin. .2857 gm. silver halide was obtained,

indicating 1544 gm. iodin, or .0031 gm. per tablet.

In a duplicate determination, 50 tablets gave .2764 gm. silver halide, indicating .1493 gm. iodin, or .0031 gm. per tablet.

Since each tablet contains .0030 gm. total iodin (average of the three estimations), and liberates on acidulation .00025 gm. iodin, the difference, 00275 gm. iodin, is probably present combined with calcium as iodid. This indicates about 0.0031 gm. (1-18) grain) calcium iodid per tablet.

Iodide of Lime.

(From the report of the Chemical Laboratory of the American Medical Association.)

Having determined the composition of Calcidin, it was deemed of interest to determine the composition of a similar product sold as "iodide of lime."

Iodide of lime:

"Available" iodin (liberated on acidulation)	10.66
Calcium iodide (CaI2)	.65
Calcium carbonate (CaCO3)	3.77
Lime (CaO)	49.06
Alumina (Al2O3)	1.87
Magnesia (MgO)	13.89
Silica (SiO2)	1.22
Water (by difference)	18.88
	100.00

Iodide of lime is, therefore, essentially a mixture of lime and iodin containing about 10 per cent iodin. The other constituents apparently are impurities in the lime used in its manufacture.

Calcidin (The Journal A. M. A., Sept. 7, 1907, page 865), was found to contain 14.13 per cent iodin of which 9.2 per cent in the presence of the acid of the stomach acted as free iodin, whlie the remaining portion acted as calcium iodid. The iodide of lime contains 11.22 per cent iodin, practically all of which (10.66 per cent) is "available," i. e., liberated as free iodin by the acid of the stomach.

IODIDE OF LIME TABLETS.

Examination of the tablets of "iodide of lime," demonstrated that, like "calcidin tablets," they differ in composition from the original substance with which they are supposed to represent. Iodide of lime was found to contain approximately 10 per cent "available' 'iodin. Each 1-3 grain tablet should, therefore, contain about 1-30 "available' 'iodin. Instead, it was found that each tablet was equivalent to 1-128 grain of free iodin.

It is worthy of note in this connection that the tablets appeared decidedly brown in color, which might be taken to indicate that they really did contain a considerable amount of free iodin. The examination, however, showed that brown color to be due to the presence of large amounts of iron oxid.

Analysis of iodide of lime: The determinations and calculations were made in the same manner as for calcidin (The Journal A. M. A., Sept. 7, 1907, page 865). In the case of available iodin, there being no cornstarch present, the specimen was simply mixed with water, an excess of hydrochloric acid added, and the liberated iodin titrated. Silica (SO2) is the residue insoluble in hydrochloric acid. Aluminum was determined in the usual manner.

This analysis shows that the specimen contained:

Total iodin	11.22
Calcium (Ca)	36.64
Aluminum (Al)	.99
Magnesium (Mg)	8.38
Carbon dioxid (Co2)	1.66
Silica (SiO2)	1.22

Asthma Remedy Special.

Tincture of sunflower seeds.32 ounces.
Tincture of motherwort ....32 ounces.

Wine of ipecac .....32 ounces.
Tincture of lobelia .....32 ounces.
Bromide of potash..... 8 ounces.
Iodide of potash ..... 4 ounces.
Saccharin soluble .....30 grains.

Dissolve the potashes in the tincture. Add the wine of ipecac and saccharin.

Dose: One teaspoonful in a little water every half hour until nausea or vomiting results. This will give certain relief. Then take one teaspoonful three times daily, four to six weeks.

Fluid Cascara Compound.

Cascara bark, rough ground.12 ounces.
Jalap, crushed ..... 2 ounces.
Senna leaves ..... 2 ounces.
Potash carbonate ..... 1 ounce.

Mix the potash with the drugs, pack in a cylindrical metal percolator macerate with and run boiling water through until the strength of the drugs are exhausted, evaporate down to 12 fl. ounces. Add 4 ounces of alcohol.

Mixture of Camphor Compound Eclectic.

Camphor water ..... 5 fl. ounces.
Peppermint water ..... 5 fl. ounces.
Spearmint water ..... 5 fl. ounces.
Paregoric .....10 fl. drams.

Stokes' Expectorant.

Ammonium carbonate.....256 grains.
Fl. Ext. of senega ..... 1 ounce.
Fl. Ext. of squill ..... 1 ounce.
Paregoric ..... 5 ounces.
Water ..... 5 ounces.
Syrup of tolu ..... 20 ounces.

Dissolve the carbonate of ammonia in the water. Add the paregoric and the fluid extracts. Do not cork until effervescence has ceased.

UNOFFICIAL TINCTURES.

Tincture Astringent.

Nutgalls, powdered .....16 ounces.
Oil of bergamot .....30 minims.
Oil of lemon .....30 minims.
Oil of thyme .....10 minims.
Oil of lavender .....10 minims.
Oil of rosemary .....10 minims.
Tincture of benzoin ..... 1 ounce.
Alcohol, 85 per cent, sufficient.

Exhaust the galls by percolation with alcohol. Distill off the alcohol and reduce by evaporation to 8 fl. ounces. Add to this 8 fl. ounces of alcohol and the oils.

Tincture Black Hellebore.

Black hellebore moderately fine powder .....2 ounces troy.
Diluted alcohol..... sufficient.

Moisten the drug with 4 ounces of the dilute alcohol and macerate for 3 days. Place in a percolator and run dilute alcohol through until 16 ounces are obtained.

Tincture of Burdock Seed.

Burdock seed, ground..4 ounces troy.
Water ..... 4 fl. ounces.
Alcohol .....12 fl. ounces.

Mix the liquids and moisten the drugs with 6 ounces of the mixture. Let macerate for 3 days, then percolate with menstruum of above strength until 16 fl. ounces are obtained.

Tincture of Cannabis Indica Ethereal.

Solid extract of cannabis Ind. .....240 grains.
Spirit of nitrous ether .. 8 fl. ounces.

Place the spirit of nitrous ether and the extract in a well corked bottle. Shake occasionally until dissolved.

Tincture of Cantharides Ethereal.

Cantharides, powdered..1 ounce troy.
Spirit of nitrous ether....14 fl. ounces.

Place the spirit of nitrous ether and the powdered cantharides in a well-corked bottle. Shake occasionally. In a week let the liquor become clear by subsidence. Decant off the clear portion and filter the residue.

Tincture of Cubeb Ethereal.

Cubeb berries, powd..2 ounces troy.
Spirit of nitrous ether...16 fl. ounces.

Place the cubebs and spirit of nitrous ether in a well-corked bottle. Shake occasionally. In a week let the liquor become clear by subsidence. Decant off the clear portion and filter the residue.

Tincture of Green Soap.

(Tilbury Fox.)

Soft soap .....1 ounce troy.
Oil of lavender.....1½ drams.
Oil of cade .....1 ounce.
Alcohol .....1 ounce.
Mix.

Tincture of Green Soap With Tar.

(Hebra's.)

Soft soap .....1 ounce troy.
Alcohol .....1 fl. ounce.
Tar .....1 ounce.
Mix.

Tincture of Guaiac Ethereal.

Guaiac, crushed ....1½ ounces troy.
Spirits of nitrous ether....8 fl. ounces.

Place the guaiac and the spirits of nitrous ether in a tightly corked bottle. Shake occasionally. In 16 days let the liquor become clear by subsidence. Decant the clear portion. Filter the residue.

Tincture of Iodine Ethereal.

Iodine resublimed .....32 grains.
Ether sulphuric .....1 fl. ounce.
Dissolve.

Tincture of Iodoform Co.

Iodoform ..... 15 grains.
Potassium Iodide .....120 grains.
Glycerine ..... 2 fl. drams.
Alcohol ..... 6 fl. drams.

Rub the iodoform and the potassium iodide with the glycerine in a mortar. Then add the alcohol and rub until dissolved.

Tincture of Jalap.

Jalap in fine powder..6 ounces troy.

Macerate the jalap for six days with 6 ounces of a mixture of 4 ounces of alcohol and 2 ounces of water. Pack in percolator and run menstruum (same strength as indicated) through until 32 fl. ounces of tincture are obtained.

Tincture of Jalap Compound.

Jalap, powdered .....1 ounce troy.
Turpeth root .....60 grains.
Scammony .....120 grains.
Alcohol, 60 per cent.... 12 fl. ounces.

Macerate for ten days. Express and filter.

Tincture of Opium Acetated.

Opium, powdered .... 2 ounces troy.
Vinegar, distilled .....12 fl. ounces.
Alcohol, 94 ..... 8 fl. ounces.

Macerate for 8 days. Express and filter.

Tincture of Rhubarb and Senna.

Rhubarb, powdered ..... 1 ounce.
Senna, powdered .....¼ ounce.
Coriander seed, powdered..⅛ ounce.

Fennel seed, powdered.....⅛ ounce.
Licorice, powdered .....⅛ ounce.
Raisins ..... 6 ounces.
Alcohol dilute .....48 fl. ounces.
Maacerate for 7 days. Express and filter.

Tincture of Kino Co.

Powdered opium .....60 grains.
Powdered kino.....60 grains.
Camphor .....90 grains.
Cloves, powdered .....90 grains.
Diluted alcohol, sufficient to make by percolation.....16 ounces.

Lightning Paint Remover.

Dissolve caustic potash.. 1½ ounces.
In wood alcohol ..... 4 ounces.
Apply with a swab. Do not let the mixture touch the hands.

Javelle Water.

Carbonate of potash..... 4 ounces.
Chloride of lime..... 4 ounces.
Water .....100 ounces.
Dissolve the carbonate of potash in 16 ounces of water. Dissolve the chloride of lime in 84 ounces of water and mix the two solutions.

Benzine Jelly.

Tincture of quillaia..... 3 ounces.
Benzine .....13 ounces.
Mix and shake for 30 minutes. Set aside until it solidifies.

To make the tincture of quillaia take 1 ounce of ground soap bark, macerate for 5 days with 2 ounces of dilute alcohol. Then run dilute alcohol through until 5 ounces are obtained. Three drops of oil of citronella may be added. This jelly is a good cloth cleanser.

Crystal Soap Powder.

Powdered laundry soap....16 ounces.
Powdered sal soda..... 8 ounces.
Silicate of soda..... 4 ounces.
Oil of citronella ..... 5 drops.
Mix, dry and run through a sieve.

Borax Soap Powder.

Borax, powdered ..... 8 ounces.
Sal soda, powdered .....24 ounces.
Laundry soap, powdered....40 ounces.
Silicate of soda .....16 ounces.
Oil of citronella.....10 drops.
Mix, dry and run through a sieve.

Cocoanut Soap Powder.

Cocoanut soap .....20 ounces.
Sal soda, powdered .....12 ounces.
Silicate of soda..... 8 ounces.
Borax, powdered ..... 4 ounces.
Mix, dry and run through sieve.

Dextrin Mucilage Alkaline.

Dextrin, yellow .....12 ounces.
Borax, powdered .....1½ ounces.
Glucose .....1½ ounces.
Water, hot .....11 ounces.
Dissolve the borax in the hot water, then add the dextrin and glucose. Keep up a gentle heat until all is dissolved. Strain through cheese cloth.

Dextrin Mucilage Acid.

Dextrin, yellow or white....12 ounces
Acetic acid dilute ..... 2 ounces.
Salicyclic acid..... ....30 grains.
Glycerine ..... 2 ounces.
Water, hot .....11 ounces.
Dissolve the dextrin in the hot water. When dissolved add the acetic acid in which has been previously dissolved the salicylic acid. Then add the glycerine.

Stick Mucilage, White.

White glue, ground .....½ ounce.
Gelatine sheet .....½ ounce.
Water ..... 1 ounce.

Sugar, granulated .....⅛ ounce.
Gum arabic, powdered..... 1 ounce.

Soak the glue and gelatine in the water. When soft place in a water bath. Add the sugar and gum and dissolve by the aid of gentle heat. Pour out on polished slab and cut into pieces of a suitable size or pour into molds.

Takes a few days to dry.

Psoriasis Salve.

Creolin .....1½ ounces.
White precipitate .....240 grains.
Soft soap ..... 5 ounces.
Petrolatum, yellow .....9½ ounces.

Incense Powder.

Benzoin, powdered ..... 8 ounces.
Styrax, powdered ..... 8 ounces.
Cascarilla, powdered..... 2 ounces
Nitrate of potash, powd....¼ ounce.
Artificial musk .....10 grains.

Bronzing Powder, Cheap.

(For Plaster Casts.)

Cheap bronze powder.....4 ounces.
Yellow dextrin .....1 ounce.

Mix well.

Directions: Place a small portion in a saucer, pour on a small quantity of water and with a piece of cheap absorbent cotton dab the powder on the plaster image to be bronzed.

Gold, silver, green, any color bronze powder may be used.

Blackboard Paint Cheap.

Water .....144 ounces.
Borax ..... 7 ounces.
Shellac ..... 36 ounces.
Solid extract logwood .... 2 ounces.
Bichromate of potash..... 1 ounce.
Prussiate of potash.....⅛ ounce.
Lampblack ..... 10 ounces.
Emery powder ..... 10 ounces.

Directions for making same as liquid shoe polish, page 88.

Anti-Kink Pomade.

Petrolatum, yellow .....16 ounces.
Bees wax, yellow ..... 4 ounces.
Venice turpentine ..... 2 ounces.
Oil of lavender .....½ ounce.
Artificial musk .....½ dram.

Melt the bees wax, petrolatum, venice turpentine and artificial musk together. When cool add the oil of lavender.

Hair Curler Liquid.

Powdered borax ..... 1 ounce.
White dextrin .....⅛ ounce.
Water, hot ..... 8 ounces.
Alcohol ..... 8 ounces.
Perfume ..... q. s.

Dissolve the borax and dextrin in the hot water. When cool add the alcohol and perfume.

Terpeneless Oils for Flavoring Extracts.

Terpeneless oils are expensive. They are labor savers, but for my own choice I prefer the regular essential oils of good quality, made soluble if solubility is requisite.

A FEW REMARKS TO MY LABORATORY FRIENDS.

Elixirs, syrups and tinctures are easy to prepare and the utensils required are few and inexpensive. A few stone crocks, holding 6 to 20 gallons, may be obtained from any dealer in stoneware. Two or three glass percolators, glass funnels, assorted sizes, two or three tin or copper percolators, and two or three ten to eighteen quart graniteware dishpans and saucepans. Half a dozen two gallon narrow-mouth green glass bottles are very useful for mixing small quantities, and are very clean, economical, stock bottles.

The scales, spatulas, graduates, mortars, thermometers, water bath, etc., cost but very little and last a long time.

Assayed drugs may be purchased from which you can prepare perfectly reliable goods.

Industry, intelligence and ambition to excel are the mainsprings of the business.

Never filter a preparation if you can avoid it. Have your wines, alcohol, water and syrup clear before you mix them, and very little filtering will be needed. The whites of ten eggs will fine forty gallons of port wine. Beat up the whites with a gallon of the wine, using a whisk. Pour the mixture into the remainder of the wine and rouse well up with a broom handle. Mark the date of fining and in about fourteen days your wine will be brilliant. Of course, it will be necessary to put a faucet in the barrel and have the barrel securely blocked on a stand before fining. For fining sherry, see sherry to fine. Remember, that many preparations will clear themselves by subsidence of the floculent particles, if prepared a few days before using and then the clear portion can be syphoned or decanted off and the residue filtered, thus saving time and money. I have seen in a laboratory, and in the hot season, too, a hundred open funnels working overtime to cut down the profits and only a portion of the liquid found its way into the receiver. A receiver was appointed soon after to liquidate the concern that owned the filters. Nothing excels an open filter as a profit swallower, unless it be an open sink. Beside this, some goods are more active by being a little cloudy. There must surely be a great loss in filtering pepsin and pancreatin preparations, especially pancreatin. In my humble opinion it would be better to have the pancreatin in the bottle than to leave it in the filter.

Take the formula of alkaline rhubarb with pancreatin. The bicarbonate of potash in solution will carry down some of the rhubarb and pancreatin. Now, if this preparation is dispensed unfiltered and a shake well label placed on the bottle, the medicine will be a valuable one, but if it is filtered it will be another instance of elegant inoperative pharmacy. When filtering through paper much annoyance from breaking filters may be avoided by cutting three

nicks in a cork of suitable size. Insert in the throat of the funnel, on this place a small piece of absorbent cotton, dampened with a portion of the menstruum. This arrangement will support the filtering paper and prevent breakage.

It is not necessary to go into details about the alcoholic strength required in the different menstruums for tinctures and fluid extracts. These may be found in any of the pharmaceutical text books, and have no place in a work of this kind. I do not pose as a professor. I have merely set before you in a disjointed and irregular manner working formulas, well constructed and easily manipulated. The lack of classification (caused by a multitude of other duties) will, I hope, be more than counterbalanced by the generous menu card set before you.

TABLE OF LATIN TERMS USED IN PRESCRIPTIONS.

From Scoville's Art of Compounding.

Term or Phrase.	Contraction.	Meaning.
a a		Of each.
Abdomen, inis	Abdom.	The Belly.
Ablutio-ionis		A washing, cleansing.
Absente febre	Abs. feb	In the absence of fever.
Accurate		Carefully accurately.
Accuratissime	Accuratiss	Most carefully, most accurately.
Acerbitas-atis		Sourness.
Acerbus, a. um		Sharp, sour, harsh (to the taste).
Acetum saturninum		Solution of subacetate of lead.
Ad (prep. w. accus.)		To, up to.
Ad conciliandum gustum		To suit the taste.
Ad secundum vicem	Ad 2d. vic	To the second time.
Adde, addatur	Add	Add (thou), let it be added.
Addantur, additus		Let them be added, adding.
Addentus, addendo		
Adde cum tritu	Add. c. trit	Add with trituration.
Additis sub finem coctionis		Adding toward the end of boiling.
Ad defectionem animi	Ad. def. anim.	To fainting.
Ad gratam aciditatim		To an agreeable sourness.
Ad gratum gustum		To an agreeable taste.
Adhibendus	Adhib	To be administered.
Adjacens		Near to.
Ad libitum	Ad. lib	At pleasure.
Admove, admoveatur		
Admoveantur	Admov.	Apply, let it or them be applied.
Admoveatur durante dolore		
Ad partes dolentes	Ad. part. dolent	To the painful (or aching) parts.
Adstante febre	Adst. febre	When the fever is on.
Adversum	Adv.	Against.
AEtas, atis		Age, time of life.
Aggrediente febre	Aggred. feb	When the fever is coming on.
Agita, agitetur	Agit.	Shake, stir, let it be shaken or stirred.
Agitato, agitando		With or by shaking, or agitation.
Agita ante sumendum		Shake before taking.
Agita donec refrigerat		Stir until it is cold.
Agitando miscentur		Let them be mixed by shaking.
Agitato vase	Agit. vas	The vial being shaken.
Albus, a. um	Alt.	White.
Alcoholisatus, i		Alcholized, i. e., powdered extremely fine.

Term or Phrase.	Contraction.	Meaning.
Aliquot	.....	Some, a few.
Alimentum, i	.....	Nutrient, nourishment.
Alter alteram	Alt	The other, the rest.
Alternis horis	.....	Every other hour.
Aluta	.....	Leather.
Alvo astricta (or adstricta)	Alv. ast	For confinement of the bowels (constipation).
Alvus	.....	The belly, the bowels.
Amplus	Amp.	Large ample.
Ampulla	.....	A large vessel.
Ana	ā a	Of each.
Ante	.....	Before.
Applica, applicetur	.....	Apply, let it be applied.
Aqua astricta	Aq. ast	Frozen water, ice.
Aqua bulliens	Aq. bull	Boiling water.
Aqua Communis	Aq. com	Common water.
Aqua fontis (fontalis or fontana)	Aq. font	Spring water.
Aqua gelidus	.....	Cold water.
Aqua marina	Aq. mar	Sea water.
Aqua phagedaenica	Aq. phaged	Yellow wash.
Aqua pluvialis	Aq. pluv	Rain water.
Aqua potabilis	.....	Drinkable water.
Aqua saturni	Aq. satur	Subacetate of lead water.
Aqua urbis	Aq. urb	City water.
Aquila alba	.....	Calomel.
Argilla, ae	.....	Clay.
Aut	.....	Or.
Bacca, ae	.....	Berry.
Balneum	.....	A bath.
Balneum arenae	Bal. ar	Sand-bath.
Balneum maris	Bal. mar	Salt (or sea) water bath.
Balneum vaporis	Bal. vap	Steam (or vapor) bath.
Bene	.....	Well, good.
Bibe, bibatur	.....	Drink, let it be drank.
Biduum	.....	Two days.
Bis	.....	Twice.
Bis in die, bis in dies, bis intra diem	Bis in. d	Twice a day.
Bonus, a. um	.....	Good.
Brachium	.....	An arm.
Brevis	.....	Short.
Bulliat, bulliant	Bull	Let it (or then) boil.
Butyrum	.....	Butter.
Caeruleus, i	Caerul.	Dark blue, dark green.
Calefactus, i	Calef.	Warmed.
Calido solvuntur	.....	Let them be dissolved while hot.

Term or Phrase.	Contraction.	Meaning.
Calomelas or calomelanos...	Calom.	Calomel.
Calor, oris.....	Calor.	Heat, warmth.
Capiat	Cap.	Let the patient take.
Capiat omnes cursu hodie...	.....	Let the patient take all during this day.
Capiat quantum vis (or volueris).	Cap. quant. vis.	Let the patient take as much as he will.
Capillus, i.....	.....	The hair.
Caput, capitis.....	.....	The head, of the head.
Carbasus, i.....	Carbas.	Linen, lint.
Caro, carnis.....	.....	Meat, of meat (flesh).
Cataplasma, i.....	.....	A poultice.
Catharticum, i.....	.....	A cathartic.
Caute	.....	Cautiously.
Celeriter	.....	Quickly, immediately.
Cena (or caena or coena)...	.....	Supper.
Ceratum, i.....	.....	A wax salve.
Charta	Chart.	Paper.
Charta cerata.....	Chart. cerat..	Waxed paper.
Chartula	Chart.	A small paper.
Chininum	Chinin.	Quinine.
Cibus, i.....	.....	Food, victuals.
Circitu	.....	Near, round, about.
Cito	.....	Quickly.
Cit dispensetur!.....	Cito disp.....	Let it be dispensed quickly.
Clarus, a, um.....	.....	Bright, clear.
Clausus, a, um.....	.....	Closed, inclosed.
Cochleare, cochleatim.....	Coch.	A spoonful, by spoonfuls.
Cochleare, amplum, or..... magnum.....	Coch. amp..... Coch. mag....	A tablespoonful.
Cochleare medium or modicum	Coch. med....	A desertspoonful.
Cochleare parvum.....	Coch. parv....	A teaspoonful.
Coctio	.....	Boiling.
Cogantur	.....	Let them be combined.
Cola, coletur, colentur.....	.....	Strain, let it (or them) be strained.
Colaturae (dat.).....	Colatur.	To or of the strained liquor.
Collum, i.....	.....	The neck.
Collunarium, i.....	.....	A nose-wash.
Collutorium	Collut.	A mouth-wash.
Collyrium	Collyr.	An eye lotion.
Coloretur	.....	Let it be colored.
Commisce, commiscetur, commiscentur	.....	Mix together, let it or them be mixed together.
Commode (adv.).....	Commod	Rightly, properly, suitably.
Concisus	.....	Cut.
Concuscus, i.....	.....	Shaken.
Concuti, concutiatur.....	.....	Shake, let it be shaken.

Term or Phrase.	Contraction.	Meaning.
Congius	Cong.	A gallon.
Conquassaando		By vigorous shaking.
Conserve		A conserve; also preserve.
Consperge, conspergetur	Consperg.	Dust or sprinkle, let them be sprinkled or dusted.
Contere, conteruntus	Contere.	Rub together, let them be rubbed together.
Conterendo		With or by rubbing together.
Continuantur remedia	Cont. rem	Let the medicines be renewed.
Contra		Against.
Contritus, a, um	Contrit.	Broken, ground, crumbled.
Contusus, a, um	Contus.	Bruised.
Coque, coquetur, coquantur	Coq.	Boil, let it (or them) be boiled.
Coquantur simul	Coq. simul	Boil together.
Cor, cordis		The heart.
Cortula, ae		A measure.
Coxa		The hip.
Cras crastinus	Cras.	To-morrow.
Cras sumendus		To be taken to-morrow.
Cras mane		To-morrow morning.
Cras nocte		To-morrow night.
Cras vespere		To-morrow evening.
Cujus, cujus libet	Cuj., cuj. lib.	Of which, of whatever you please.
Cum	C.	With.
Cum guttis aliquot		With a few drops.
Cursu (abl.)		In the passing of, during.
Cyathus, or	Cyath.	
Cyathus vinarius	Cyath. vinar.	A wineglass.
Da, detur, dentur	Da, det., dent.	Give, let it (them) be given.
De (prep. w. abl.)		From, down.
Deaurentur		Let them be gilded.
Debitae spissitudonis	Deb, spiss	To a proper consistence.
Debitus, a, um		Due, proper.
Decanta		Decant.
Decoctum	Decoc.	A decoction.
Decoque, decoquetur, decoquentur		Boil down, let be boiled down.
Decubitus	Decub.	Lying down.
De die in diem	De d. in d	From day to day.
Dein, deinde		Afterward, then.
Deglutiatur (antur)		Let or may be swallowed.
Dejicerit, dejiciatur		Will purge, let it be purged.
Dexter		Right.
Diebus alternis	Dieb. alt	Every other day.
Dies (diei, gen.)	D.	A day.
Digere, digeretur, digerentur		Digest, let be digested.
Diluculum, i, duluculo		Daybreak, at dawn.
Dilue, dilutus, a, um		Dilute, diluted.

Term or Phrase.	Contraction.	Meaning.
Dimidius, a, um.....	Dim.	One-half.
Directiones	Dir.	Directions.
Directione propia.....	Dir. prop.....	With proper directions.
Dispensa, dispensetur.....	Disp.	Dispense, let it be dispensed.
Divide, dividatur, dividantur.	Divid.	Divide, let it be divided.
Dolor, dolore.....	.....	Pain, in pain.
Donec	.....	Until.
Donec alvus dejecerit.....	.....	Until the bowels move.
Donec alvus commode purgetur	.....	Until the bowels are properly purged.
Donec alvus soluta fuerit....	.....	Until the bowels are loosened.
Donec habeas colaturae.....	.....	Until you have of strained liquor.
Donec leinatur dolor.....	.....	Until the pain is relieved (or assuaged).
Donec sint residuae.....	.....	Until there is ——— of residue.
Dosis	.....	A dose.
Dulcedo (idinis) dulcitas-atis.	Dulc.	Sweetness.
Duplico	.....	In duplicate.
Eadem (fem.).....	.....	The same.
Ejusdem	.....	Of the same.
Electuarium	Elect.	An electuary.
Emesis	.....	Vomiting.
Emplastrum epispasticum....	Emp episp	A blistering plaster.
Emplastrum vesicatorium....	Emp vesic	
Enema, enemata.....	Enem.	A clyster. (Injection for the rectum).
Epistomium	Epistom.	A stopper, bung.
Et	.....	And.
Etiam	.....	Also, besides.
Etiam nunc.....	.....	Yet, also, besides.
Evanuerit	.....	Shall have passed away, disappeared.
Ex or E (w. abl.).....	E.	From, out of.
E qua formentur.....	.....	From which are formed.
E quibus sumatur.....	.....	From which are given.
Exhibeatur	Exhib.	Let it be exhibited (administered).
Ex modo praescripto.....	E. m. p.....	After the manner prescribed (as directed.
Ex paululo aquae.....	.....	From (or in) a very little water.
Experime	.....	Try (thou).
Ex Parte.....	.....	Partly.
Exprime, exprimatur.....	.....	Express, let it be expressed.
Extende, Extendatur.....	.....	Spread, let it be spread.
Extende super alutam.....	Extend sup alut	Spread upon leather.
Extende super pannum.....	.....	Spread upon cloth.
Extrahe, extrahatur.....	.....	Extract (thou), let it be extracted.
Extractu m.....	Ext.	An extract.

Term or Phrase.	Contraction.	Meaning.
Fac, fit, fiat, fiant.....	Ft.	Make, let it be made.
Facere	.....	To make.
Farina	.....	Flour, meal.
Fasciculus	Fascic.	A little bundle.
Febris	.....	Fever.
Febre durante.....	.....	During the fever.
Femoris interni.....	Fem. inter....	To the inner thigh.
Fervens (entist).....	Ferv.	Hot.
Fictilis, e.....	.....	An earthen vessel.
Filtra	Filt.	Filter.
Filtrum	Filt.	A filter.
Filtrum chartae.....	.....	Filter paper.
Flavus, a, um.....	Flav.	Yellow.
Fluidus, a, um.....	Fld.	Fluid.
Flores benzoes.....	.....	Benzoic acid.
Florescinae	.....	Santonica.
Flores zinci.....	.....	Oxide of zinc.
Formentur	Form.	Let them be formed.
Frigor, oris.....	Frig.	Cold.
Frustillatim (adv.).....	Frust.	In small pieces, little bits.
Fuerit	.....	Shall have been.
Fuscus, a, um.....	.....	Brown, dark.
Gargarisma	Garg.	A gargle.
Gelatina	.....	Gelatin.
Gradatim	.....	Gradually.
Granum, grana.....	Gr	A grain, grains.
Gratus, a, um.....	.....	Pleasant, agreeable.
Grossus, a, um.....	.....	Large, coarse.
Gummi mimosae	.....	Gum arabic.
Gutta, Guttae.....	Gtt.	A drop, drops.
Guttatim	.....	By drops.
Harum pilularum.....	.....	Of these pills.
Harum pulverum.....	.....	Of these powders.
Haustus, i.....	Haust.	A draught.
Hebdoma, ae.....	.....	A week, for a week.
Herba, ae.....	.....	An herb.
Heri	.....	Yesterday.
Hora	.....	An hour.
Hora dicubitus.....	Hor. dic.....	At bed-time.
Horae intermedis.....	Hor. interm...	In the intermediate hours.
Hora somni.....	Hor. som.....	At bed-time.
Hora unius spatio.....	.....	At the end of an hour.
Idem	.....	The same.
Identidem	.....	Repeatedly, often.
Idoneus, a, um.....	.....	Suitable, convenient.
Idoneo vehiculo.....	Idon, vehic....	In a suitable vehicle.

Term or Phrase.	Contraction.	Meaning.
Illico		Then, immediately.
Illico lagena obturatur		Let the bottle be stoppered immediately.
Immitatur, immitantur		Let it (them) be introduced into, placed in.
In		In, within, upon—(sometimes) not.
Imprimis		Chiefly first.
Incide, incusus		Cut, cutting.
Inde		Therefrom.
Indies		Daily.
Infunde		Put or pour in.
Ingere, ingerendus		Put or force into, forcing into.
Ingerendus capsulas gelatinosas		Putting into gelatine capsules.
Injiciatur	Injic.	Let it be injected.
In impetu effervescentiae		In the height of effervescence.
In lagena bene obturatur		In a well-stopped bottle.
In loco frigido	In. loco. frig.	In a cold place.
		Let them be kneaded into a mass.
In massam cogantur		Let them be combined ina mass.
In olla ferrea vitreata		In a glazed iron pot.
In partes aequales		Into equal parts.
In pulmento		In gruel.
Instar		The form and size of.
In vaso clauso		In a closed (covered) vessel.
In vaso leviter clauso		In a loosely closed vessel.
Inter, internus		Between, inter.
Involve, involvuntur		Cover (coat), let them be covered.
Involve gelatina		Coat with gelatin.
Invoruntur		Let them be moistened, sprinkled.
Ita		In such manner.
Iteretur, iterentur		Let it (or them) be repeated.
Jam		Now.
Jentaculum, i	Jentac.	Breakfast.
Jucunde	Jucund.	Pleasantly.
Julepum	Jul.	A julep.
Juscellum		A broth.
Jusculum		Soup.
Juxta, juxtim		Near to, nigh, close by.
Kalium	K.	Potassium.
Kali		Potassa.
Kali praeparata		Potassium carbonate.
Lac, lactis		Milk, or milk.
Lamella, ae, lamina, ae		Plate, leaf, layer, scale.
Lana, ae		Flannel, wool.
Languor, oris		Faintness, feebleness.

Term or Phrase.	Contraction.	Meaning.
Lapidens, a, um	Lapid.	Of stone, stony.
Lapis infernalis		Silver nitrate, lunar caustic.
Largus, a, um		Abundant, plentiful.
Laridum, lardum		Lard.
Latus, a, um		Broad, wide.
Latus, eris (lateris)		The side, of the side.
Latere admoveatur	Lat. admov.	Let it be applied to the side.
Lateri dolenti	Lat. dol.	To the painful side.
Laxamentum ventris		Purging, evacuating.
Laxus, a, um		Loose, open (app. to astricta).
Lectus, i		A bed, couch.
Leniter		Easily, gently.
Leniter terendo		By rubbing gently.
Leviter		Lightly.
Leviter clausus		Lightly closed.
Linctus, i		A linctus or lohoch.
Linimentum, i		A liniment.
Lintum, i		Lint.
Liquor-oris	Liq.	A liquor.
Lutes, a, um	Lut.	Yellow, golden yellow.
Macera, maceratur, maceruntur	Macer.	Macerate, let it (them) be macerated.
Macera donec refrigerant		Macerate until cold.
Macera per horas tres		Macerate three hours.
Macera per sextum horae partem		Macerate ten minutes (one-sixth part of an hour).
Magnus, a, um	Magn.	Large.
Mane (indeci)		Morning, in the morning.
Mane bene, mane plane		Early in the morning.
Mane primo		
Manipulus, i		A handful (bundle).
Manus, i		The hand.
Mare, maris		The sea, of the sea, also sea-water.
Massa, ae	Mass.	A mass.
Matula		A vessel, pot (for liquids).
Matutinus, a, um		In or of the morning.
Medius-a-um	Med.	Midst, middle, medium.
Mensura		By measure.
Mica, ae		A crumb, morsel.
Mica panis	Mic. pan.	Crumb of bread.
Minimum, i	M.	A minim.
Minutum, i		A minute.
Misce, miscetur, miscentur	M.	Mix, let it (them) be mixed.
Misce accuratissime	M. accur.	Mix very intimately.
Misce bene	M. bene.	Mix well.
Misce caute	M. caute.	Mix cautiously.

Term or Phrase.	Contraction	Meaning.
Miscetur fortiter conquas sando	.....	Let it be mixed (with) violent agitation.
Mistura	Mist.	A mixture.
Mitte, mittatur, mittantur	.....	Send, let it (them) be sent.
Mitte tales	.....	Send of such, send like this.
Modicus, a, um	.....	Moderate (sized), middling.
Modo dictu	M. Dict.	As directed in the way said.
Modo praescripto	M. Prescrip.	As directed or prescribed.
Mollis, is	.....	Soft.
Mora, ae	.....	A delay.
More dictu	M. dict.	In the manner said (as directed).
More solitu	Mor. sol.	In the accustomed manner.
Mos, moris	.....	Manner, of manner, custom, work.
Mortarium, i	Mortar.	A mortar.
Natrium, i	.....	Sodium.
Ne tradas sine nummo	Ne. tr. s. n.	Do not deliver unless paid.
Necnon	.....	And also, and yet.
Niger, nigra, nigrum	.....	Black.
Nihilum album	Nihil. alb.	Zinc oxide.
Nisi	.....	Without, unless.
Non	.....	Not.
Non repetatur	Non. rep.	Do not repeat.
Novus, a, um	.....	New, fresh.
Nox, noctis	.....	Night, of the night.
Noxa, ae, or noxia, ae	.....	An injury, hurt.
Nucha	.....	The nape of the neck.
Numerus, i	.....	Number.
Numero	No.	In number.
Nunc	.....	Now.
Nutricius (nutritus) a, um	.....	Nourishing, nutritious.
Nutritus—us	.....	Nourishment.
Nux—nucis	.....	Nut, of a nut.
Obduce, obducatur	.....	Cover or conceal, let it be covered or concealed.
Obductus, a, um	.....	Covered, concealed, coated.
Obtritus, a, um	.....	Crushed.
Occlusus, a, um	.....	Enclosed.
Octarius	O.	A pint.
Octuplus, octuplo	Octup.	Eight-fold,—in eight-fold.
Occulus-i	.....	The eye.
Odoramentum, i	Odoram	A perfume.
Odoratus, a, um	Odorat.	Odorous, smelling, perfuming.
Odora, odoretur	.....	Perfume, let it be perfumed.
Oleosus, a, um	.....	Oily.
Oleum—sine igne	.....	Cold drawn or pressed—oil.
Olla, ae	.....	A pot, jar.

NON-SECRET FORMULAS.

Term or Phrase.	Contraction.	Meaning.
Ollicula, ae		A little pot.
Omnis		All, every.
Omni hora	Omn. hor.	Every hour.
Omni mane	Omn. man.	Every morning.
Omni nocta	Omn. noct.	Every night.
Optimus, a um	Opt.	Best.
Opus indeci)		Need, necessity.
Oryza		Rice.
Os, oris		The mouth, of the mouth.
Ovi putamen (inis)		Anegg-shell.
Ovum, i		An egg.
Pabulum, i		Food, nourishment.
Pallidus, i		Pale, pallid.
Panis, i		Bread.
Pannus, i, pannulus, i		A cloth, rag.
Para, parita, paretur, paratus i		Prepare, let be prepared, prepared.
Paretur indie		Let be prepared therefrom.
Pars, partis, parti		A part, of the part, to the part.
Pars affecta fricetur		Let the affected parts be rubbed.
Parte affecta fricetur		Rub upon the affected part.
Partes aequales	P. e.	Equal parts.
Partitus, a, um		Divided.
Partitis, vicibus		In divided doses.
Parvus, a, um, parvulus, a, um		Little, very little, an infant.
Pastillus, i		A pastille, lozenge.
Paucus, a, um, paucies (adv.)		Little, few, seldom.
Paulatim		Little by little, gradually.
Pectus, oris		The breast.
Penicillum, i, peniculus, i		A pencil, brush, little roll.
Per (prep. w. acc.)		Through, by means of, very.
Peractus, a, um		Finished.
Percalefactus, a, um		Thoroughly heated.
Percola, percolatur		Strain through, percolate, let be strained through.
Perge, pergetur		Proceed with, continue, let be continued.
Perinde		In the same manner, just as.
Perpurus, a, um		Very clean.
Pervesperi (adv.)		Very late in the evening.
Pes, pedis, pedi		The foot, of to, the foot.
Pessarium, i Pessulum, i	Pess.	A pessary.
Phiala, ae	Ph.	A phial.
Phiala prius agitata	P. P. A.	The vial having first been shaken.
Pilum, ae		A pill.
Pilus, i		The hair.
Pinguis, is	Ping.	Fat, grease.
Pistillum, i		A pestle.

Term or Phrase.	Contraction.	Meaning.
Placebo		I will satisfy (will please).
Plasma, atis (n.)		A form, figure. (Glycerite of starch).
Plasma, plasmetur		Mould (thou), let it be moulded.
Plenus, a, um		Filled.
Poculum, i, pocillum, i		A drinking cup, a little cup.
Pondere		By weight.
Pondus, eris, ponderatus, i		A weight, weighing.
Pondus civile		Avoirdupois weight.
Pondus medicinale		Apothecaries' weight.
Post cibo	Post cib	After eating.
Postridie		On the next day, the following day.
Potus, us		A drink, drinking.
Prae (prep. w. abl.)		Before, also very.
Prandium, i	Prand.	Dinner.
Pridie		On the day before.
Primus, a, um		First, earliest, beginning.
Pro (adv. and prep. w. abl.)		For, in favor, of, before, according to.
Pro dose		For a dose.
Proprius, a, um		Special, particular.
Pro ratione aetatis		According to the condition of age, i. e., According to the age of the patient.
Pro re nata	P. r. n	An occasion arises, occasionally as needed.
Pro potu cathartico		For a cathartic drink.
Proximo	Prox.	Nearest.
Prius (adv.)		Before, former.
Pugillum, i	Pugil	A pinch.
Pulpa, ae		Pulp.
Pulvis, eris	Pulv	A powder.
Pulvis, grossus	Pulv. gros	A coarse powder.
Pulvis subtilis or		
Pulvis subtilissimus	Pulv. subtil	A smooth (very smooth) powder.
Pulvis tenuis or	Pulv. tenn	An extremely fine.
Pulvis tenuissimum		(Attentuated) powder.
Purgativus, i	Purg.	A cathartic, purging.
Purus, a, um	Pur.	Pure, clean.
Pyxis, idis.		A small box, a pill box.
Quadrans, antis		A fourth, quarter.
Quadrum, i		Square.
Quadrupo		Is four-fold, quadruple.
Quam (adv.)		As much as, in what manner.
Quam libet		
Quam (of qua) vis (volueris)	q. v	As much as you wish.
Quantum libet	q. l	
Quantum placet	q. p	As much as you please.
Qupantum vis or volueris	q. v	

Term or Phrase.	Contraction.	Meaning.
Qauntum sufficit..... Quantum sufficiat..... Quantum satis.....	q. s.....	A sufficient quantity.
Quaqua hora	.....	Every hour.
Quaque, quisque.....	q. q.....	Each, every.
Quartus, i.....	.....	Fourth.
Quibus	.....	To or from which.
Qui libet.....	.....	Any, whatever you please.
Quisquam or quisquis.....	.....	Anything.
Quoque	q. q.....	Also.
Quorum	.....	Of which.
Quotidie	.....	Daily.
Quoties	.....	As often as.
Quoties requiritur	.....	As often as required.
Rarus, a, um.....	.....	Loose, thin, rare.
Ratio, onis.....	.....	Relation, proportion, condition.
Recens, ntis.....	Rec.	Fresh, recent, newly.
Recipe	R.	Take (thou). A recipe.
Redactus, i.....	Redact.	Reduced.
Redactus in pulverem.....	Red. in pulv..	Reduced to powder.
Regio, onis.....	.....	Region, direction, portion.
Relectus, a, um.....	.....	Opened, loosened.
Reliquus, i.....	Reliq.	Remaining, the remainder.
Renova, renovetur.....	.....	Renew, let it be renewed.
Renovetur semel.....	Renov. semel.	Let it be removed once only.
Repetatur, repetantur.....	Rept.	Let it (or them) be repeated.
Res, rei.....	.....	A thing, object, substance, affair.
Residuus, a, um.....	.....	Residual, remaining.
Retinetur	.....	Let it be withheld.
Rictus, us.....	.....	Wide open, distended.
Rigidus, a, um.....	.....	Rigid, hard, inflexible.
Ruber, rubra, rubrum.....	Rub.	Red, ruddy.
Rudicula, ae.....	.....	A spatula.
Rudis, is.....	.....	A stirring-rod.
Rumen, inis.....	.....	The throat.
Saccharum saturni.....	.....	Acetate (sugar) of lead.
Saepis, saepe.....	.....	Often, frequently.
Sal, salis.....	Sal.	Salt, also shrewdness.
Sal, amarum.....	.....	Magnesium sulphate.
Sal mirabile.....	.....	Sodium sulphate.
Saltem	.....	At least.
Sanguis (inis), sanguineus...	.....	Blood, bloody.
Sapor, is.....	.....	A flavor, delicacy.
Satis, is.....	.....	Enough, sufficient.
Scapulae, arum.....	.....	The shoulder blades.
Scatula, ae.....	Scat.	A box.
Scrupulum, i.....	Sc. or C.....	A scruple.
Scutum, scuto.....	.....	Protection, for protection.

Term or Phrase.	Contraction.	Meaning.
Scuto, pectori	.....	For protection to the breast.
Secundo	.....	Secondly, in order.
Secundum artem	S. A.	According to art.
Secundum legem	S. L.	Acording to law.
Semel	.....	Once, a single time.
Semi, semis	ss.	A-half, half.
Semihora	.....	Half hour.
Sensim	.....	Gently, gradually, slowly.
Seorsum	.....	Sundered, apart, separate.
Separatim	Separ.	Separately.
Septimana	.....	A week.
Sero	.....	Late, at a late hour.
Sesuncia	.....	An ounce and a half.
Sesqui	.....	Once and a-half.
Sesquihora	.....	An hour and a-half.
Sevum, i	.....	Suet, tallow.
Sextans (ntis) sextus	.....	Sixth-part, sixth.
Si	.....	If.
Sic!	.....	So, in this manner, thus.
Sicca, Siccetur	.....	Dry, let it be dried, or drained.
Siccus	.....	Dry, dried.
Signa, signetur	Sig.	Mark, imprint (thou). Let it be imprinted.
Signanter	.....	Clearly, distinctly.
Sile hujus!	.....	Keep (thou) silence concerning this!
Simplex, simplicis	Simp.	Simple, unmixed.
Simul	.....	Together.
Sinapismus, i	.....	A mustard poultice, sinapism.
Sine	s.	Without.
Sine expressione	S. expr.	Without expressing, pressing.
Singillatim, singularis	.....	One by one, singly.
Singulorum	Sing.	Of each.
Si non valeat	Si. n. val.	If it does not answer—be of value.
Si opus sit	Si. op. sit.	If it be best—needed.
Si vires permittebant	Si. vir. perm.	If the strength will permit.
Sit	.....	Let it be.
Sit in promptu	.....	Let it be in readiness.
Sitis (is), siti	.....	Thirst, for thirst.
Solatium, ii	.....	Soothing, assuaging.
Solitus, a, um	.....	Accustomed, ordinary.
Solus	.....	Alone, only.
Solve, solvatur	Solv.	Dissolve, let it be dissolved.
Solutus, solutio-onis	Sol. or solut.	Dissolved, solution.
Soluto tandem	.....	To or in the solution finally.
Solve cum leni calore	.....	Dissolve with a little heat.
Somnus	.....	Sleep.
Spiritus vini rectificatus	S. V. R.	Alcohol.
Spiritus vini tenuis	S. V. T.	Proof spirit.
Spissitudo, inis	.....	Thickness, consistency.

Term or Phrase.	Contraction.	Meaning.
Spissus, a, um	Spiss.	Dense, hard.
Statim		Immediately, at once.
Stet, stent		Let it or them stand.
Stibum, i		Antimony.
Stillatim		By drops, in small quantities.
Stilus		A stake, crayon.
Stomachus, i		The stomach, alimentary canal, gullet.
Stratum, i		Layer, stratum.
Suavis		Pleasant, agreeable.
Sub		Under somewhat.
Subactus		Subdued, sinking.
Sub finem coctionis		Toward the end of boiling.
Subigatur, subigantur		Let it (them) be subdued, overcome.
Subinde		Frequently.
Subtilis		Fine, smooth, nice.
Succes, i		Juice, sap.
Suggillationi		To the bruise.
Sume, sumat, sumantur, sumatur, sumendus	Sum.	Take or employ, or consume. Let him take, let it be taken, to be taken.
Sumat talem	Sum. talem	Let the patient take—like this.
Summo mane sumendus		To be taken very early in the morning.
Summus, a, um		Highest, summit.
Super		Above, upon, over.
Superbibe		Drink afterwards.
Suppositoria, ae	Suppos.	A suppository.
Suppositoriae rectales	Suppos. rect.	Rectal suppositories.
Suppositoriae urethrales	Suppos. ureth.	Urethral suppositories.
Tabella, ae	Tab.	A tablet, lozenge.
Talis, is		Of such, like this.
Tam		So far, in so far.
Tandem		At least, finally.
Tantum, i		So much, so many.
Tegmen, or Tegumen, inis		A cover.
Tempus, oris		Time.
Tenuis		Fine, weak, thin.
Tepidus, a, um		Tepid, lukewarm.
Ter		Thrice, three times.
Tere, teretur	Ter.	Rub, triturate. Let it be rubbed.
Teres, etis		Rubbed, smooth, polished.
Tere simul	Ter. sim	Rub (triturate) together.
Testa, ae		A shell.
Testa ovi		An egg shell.
Thion, Thionas, atis		Sulphur, sulphate.
Tinctura thebaica		Laudanum, tincture of opium.

Term or Phrase.	Contraction.	Meaning.
Triplico	Trip.	Triplicate.
Tritura, trituretur	Trit.	Triturate, let it be triturated.
Trochiscus	Troch.	Troche, lozenge.
Tum		Then, next, furthermore.
Turbidus, a, um		Turbid, muddy, not clear.
Tussis, is		A cough.
Tuto		Safety.
Ubi		Where, wherever, whenever.
Ulna, ae		The arm, elbow.
Ultime, ultima	Ult.	Lastly, at the last.
Ultimo praescriptus	Ult. praesc.	The last ordered.
Una		To one, together.
Uncia, ae		An ounce.
Unctulus, a, um, unctus, a, um		Besmeared, anointed.
Unctus, us		An anointing, anointment.
Unguentum, i	Ung.	Ointment, unguent.
Unguilla, ae		An ointment-box.
Urgens, entis		Pressing, urgent.
Ustus, a, um		Burned.
Ut or uti		That, so that, in order that.
Ut dictum	Ut dict.	As directed.
Utere, utendus, i		Make use of, to be used.
Utendus more solito	Utend. mor. sol.	To be used in the usual manner.
Vapor oris		Steam, vapor.
Vas, vasis		A vessel, utensil, bottle.
Vas vitreum	Vas. vit.	A glass vessel.
Vehiculum, i	Vehic.	A vehicle.
Vel (or ve as a suffix)		Or.
Venenosus, a, um, venenum, i		Poisonous, a poison.
Verus, a, um		True, real, genuine.
Vesper, eris		The evening.
Vesperna, ae		Supper.
Vicis, is, vices		Change, alternation, turns.
Viridis, is, viride, is		Green.
Vis, viris		Strength, vigor, life.
Vitreus, a, um		Of glass, glazed.
Vitrum, i		Glass.
Volatilis, is, volatile	Volat.	Volatile.
Vomitis, onis		Vomiting.

THE FOOD AND DRUGS ACT, JUNE 30, 1906.

AN ACT for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be unlawful for any person to manufacture within any territory or the District of Columbia any article of food or drug which is adulterated or misbranded, within the meaning of this Act; and any person who shall violate any of the provisions of this section shall be guilty of a misdemeanor, and for each offense shall, upon conviction thereof, be fined not to exceed five hundred dollars or shall be sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court, and for each subsequent offense and conviction thereof shall be fined not less than one thousand dollars or sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court.

Sec. 2. That the introduction into any State or Territory or the District of Columbia from any other State or Territory or the District of Columbia, or from any foreign country, or shipment to any foreign country of any article of food or drugs which is adulterated or misbranded, within the meaning of this Act, is hereby prohibited; and any person who shall ship or deliver for shipment from any State or Territory or the District of Columbia to any other State or Territory or the District of Columbia, or to a foreign country, or who shall receive in any State or Territory or the District of Columbia from any other State or Territory or the District of Columbia, or foreign country, and having so received, shall deliver, in original unbroken packages, for pay or otherwise, or offer to deliver to any other person, any such article so adulterated or misbranded within the meaning of this Act, or any person who shall sell or offer for sale in the District of Columbia or the Territories of the United States any such adulterated or misbranded foods or drugs, or export or offer to export the same to any foreign country, shall be guilty of a misdemeanor, and for such offense be fined not exceeding two hundred dollars for the first offense, and upon conviction for each subsequent offense not exceeding three hundred dollars or be imprisoned not exceeding one year, or both, in the discretion of the court: Provided, That no article shall be deemed misbranded or adulterated within the provisions of this Act when intended for export to any foreign country and prepared or packed according to the specifications or directions of the foreign purchaser when no substance is used in the preparation or packing thereof in conflict with the laws of the foreign country to which said article is intended to be shipped; but if said

article shall be in fact sold or offered for sale for domestic use or consumption, then this proviso shall not exempt said article from the operation of any of the other provisions of this Act.

Sec. 3. That the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor shall make uniform rules and regulations for carrying out the provisions of this Act, including the collection and examination of specimens of foods and drugs manufactured or offered for sale in the District of Columbia, or in any Territory of the United States, or which shall be offered for sale in unbroken packages in any State other than that in which they shall have been respectively manufactured or produced, or which shall be received from any foreign country, or intended for shipment to any foreign country, or which may be submitted for examination by the chief health, food, or drug officer of any State, Territory, or the District of Columbia, or at any domestic or foreign port through which such product is offered for interstate commerce, or for export or import between the United States and any foreign port or country.

Sec. 4. That the examinations of specimens of foods and drugs shall be made in the Bureau of Chemistry of the Department of Agriculture, or under the direction and supervision of such Bureau, for the purpose of determining from such examinations whether such articles are adulterated or misbranded within the meaning of this Act; and if it shall appear from any such examination that any of such specimens is adulterated or misbranded within the meaning of this Act, the Secretary of Agriculture shall cause notice thereof to be given to the party from whom such sample was obtained. Any party so notified shall be given an opportunity to be heard, under such rules and regulations as may be prescribed as aforesaid, and if it appears that any of the provisions of this Act have been violated by such party, then the Secretary of Agriculture shall at once certify the facts to the proper United States district attorney, with a copy of the results of the analysis or the examination of such article duly authenticated by the analyst or officer making such examination, under the oath of such officer. After judgment of the court, notice shall be given by publication in such manner as may be prescribed by the rules and regulations aforesaid.

Sec. 5. That it shall be the duty of each district attorney to whom the Secretary of Agriculture shall report any violation of this Act, or to whom any health or food or drug officer or agent of any State, Territory, or the District of Columbia shall present satisfactory evidence of any such violation, to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the United States, without delay, for the enforcement of the penalties as in such case herein provided.

Sec. 6. That the term "drug," as used in this Act, shall include all medicines and preparations recognized in the United States Pharmacopoeia

or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of either man or other animals. The term "food," as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed, or compound.

Sec. 7. That for the purposes of this Act an article shall be deemed to be adulterated:

In case of drugs:

First. If, when a drug is sold under or by a name recognized in the United States Pharmacopoeia or National Formulary, it differs from the standard of strength, quality, or purity, as determined by the test laid down in the United States Pharmacopoeia or National Formulary official at the time of investigation: Provided, That no drug defined in the United States Pharmacopoeia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality, or purity be plainly stated upon the bottle, box, or other container thereof although the standard may differ from that determined by the test laid down in the United States Pharmacopoeia or National Formulary.

Second. If its strength or purity fall below the professed standard or quality under which it is sold.

In the case of confectionery:

If it contain terra alba, barytes, talc, chrome, yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt, or spirituous liquor or compound or narcotic drug.

In the case of food:

First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

Second. If any substance has been substituted wholly or in part for the article.

Third. If any valuable constituent of the article has been wholly or in part abstracted.

Fourth. If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.

Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: Provided, That when in the preparation of food products for shipment they are preserved by any external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this Act shall be construed as applying only when said products are ready for consumption.

Sixth. If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

Sec. 8. That the term "misbranded," as used herein, shall apply to all drugs, or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design, or device regarding such article, or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the State, Territory, or country in which it is manufactured or produced.

That for the purposes of this Act an article shall also be deemed to be misbranded:

In case of drugs:

First. If it be an imitation of or offered for sale under the name of another article.

Second. If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, or acetanilide, or any derivative or preparation of any such substances contained therein.

In the case of food:

First. If it be an imitation of or offered for sale under the distinctive name of another article.

Second. If it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, or acetanilide, or any derivative or preparation of any such substances contained therein.

Third. If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package.

Fourth. If the package containing it or its label shall bear any statement, design, or device regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: Provided, That an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

First: In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced.

Second. In the case of articles labeled, branded, or tagged so as to plainly indicate that they are compounds, imitations, or blends, and the word "compound," "imitation," or "blend," as the case may be, is plainly stated on the package in which it is offered for sale: Provided, That the term blend as used herein shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only: And provided further, That nothing in this Act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredient to disclose their trade formulas, except in so far as the provisions of this Act may require to secure freedom from adulteration or misbranding.

Sec. 9. That no dealer shall be prosecuted under the provisions of this Act when he can establish a guaranty signed by the wholesaler, jobber, manufacturer, or other party residing in the United States, from whom he purchases such articles, to the effect that the same is not adulterated or misbranded within the meaning of this Act, designating it. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of such articles to such dealer, and in such case said party or parties shall be amenable to the prosecutions, fines, and other penalties which would attach, in due course, to the dealer under the provisions of this Act.

Sec. 10. That any article of food, drug, or liquor that is adulterated or misbranded within the meaning of this Act, and is being transported from one State, Territory, District, or insular possession to another for sale, or, having been transported, remains unloaded, unsold, or in original unbroken packages, or if it be sold or offered for sale in the District of Columbia or the Territories, or insular possessions of the United States, or if it be imported from a foreign country for sale, or if it is intended for export to a foreign country, shall be liable to be proceeded against in any district court of the United States within the district where the same is found, and seized for confiscation by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, or of a poisonous or deleterious character, within the meaning of this Act, the same shall be disposed of by destruction or sale, as the said court may direct, and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the Treasury of the United States, but such goods shall not be sold in any juris-

diction contrary to the provisions of this Act or the laws of that jurisdiction: Provided, however, That upon the payment of the costs of such libel proceedings and the execution and delivery of a good and sufficient bond to the effect that such articles shall not be sold or otherwise disposed of contrary to the provisions of this Act, or the laws of any State, Territory, District, or insular possession, the court may by order direct that such articles be delivered to the owner thereof. The proceedings of such libel cases shall conform, as near as may be, to the proceedings in admiralty, except that either party may demand trial by jury of any issue of fact joined in any such case, and all such proceedings shall be at the suit of and in the name of the United States.

Sec. 11. The Secretary of the Treasury shall deliver to the Secretary of Agriculture, upon his request from time to time, samples of foods and drugs which are being imported into the United States or offered for import, giving notice thereof to the owner or consignee, who may appear before the Secretary of Agriculture, and have the right to introduce testimony, and if it appear from the examination of such samples that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this Act, or is otherwise dangerous to the health of the people of the United States, or is of a kind forbidden entry into, or forbidden to be sold or restricted in sale in the country in which it is made or from which it is exported, or is otherwise falsely labeled in any respect, the said article shall be refused admission, and the Secretary of the Treasury shall refuse delivery to the consignee and shall cause the destruction of any goods refused delivery which shall not be exported by the consignee within three months from the date of notice of such refusal under such regulations as the Secretary of the Treasury may prescribe: Provided, That the Secretary of the Treasury may deliver to the consignee such goods pending examination and decision in the matter on execution of a penal bond for the amount of the full invoice value of such goods, together with the duty thereon, and on refusal to return such goods for any cause to the custody of the Secretary of the Treasury, when demanded, for the purpose of excluding them from the country, or for any other purpose, said consignee shall forfeit the full amount of the bond: And provided further, That all charges for storage, cartage, and labor on goods which are refused admission or delivery shall be paid by the owner or consignee, and in default of such payment shall constitute a lien against any future importation made by such owner or consignee.

Sec. 12. That the term "Territory" as used in this Act shall include the insular possessions of the United States. The word "person" as used in this Act shall be construed to import both the plural and the singular, as the case demands, and shall include corporations, companies, societies and associations. When construing and enforcing the provisions of this Act, the act, omission, or failure of any officer, agent, or other person acting for or employed by any

corporation, company, society, or association, within the scope of his employment or office, shall in every case be also deemed to be the act, omission, or failure of such corporation, company, society, or association as well as that of the person.

Sec. 13. That this Act shall be in force and effect from and after the first day of January, nineteen hundred and seven.

Approved, June 30, 1906.

UNITED STATES DEPARTMENT OF AGRICULTURE.

Office of the Secretary—Circular No. 21, Second Revision.

(Including Regulations 3, 17, 19, and 34 as amended by F. I. D. 79, 84, and 93, issued October 16, 1907, February 10, 1908, and May 23, 1908, respectively; also Regulation 9, section b, as amended by F. I. D. 99, December 8, 1908, to take effect January 1, 1909, and Regulation 15 as amended to accord with F. I. D. 104.)

RULES AND REGULATIONS FOR THE ENFORCEMENT OF THE FOOD AND DRUGS ACT.

Introduction.

Under date of October 17, 1906, forty rules and regulations for the enforcement of the food and drugs act, June 30, 1906, were adopted. Since that date six regulations, Nos. 3, 9, 15, 17, 19, and 34, have been amended, the first named by F. I. D. 79, "Collection of Samples," approved by Secretary Wilson of the Department of Agriculture, Secretary Cortelyou of the Treasury Department, and Secretary Strauss of the Department of Commerce and Labor, No. 9, by F. I. D. 99, "Change in Form of Guaranty Legend," No. 15 to accord with F. I. D. 104, on Benzoate of Soda, and the other three by F. I. D. 84, "Label" and "Character of Name," and F. I. D. 93, "Denaturing," all over the same signatures.

Regulation 2, Original Unbroken Package, has been interpreted by F. I. D. 86, and Regulation 9, Form of Guaranty, by F. I. D. 83, the latter an opinion rendered by the Attorney-General on the issue of a guaranty based upon a guaranty.

In accordance with Regulation 15, Wholesomeness of Colors and Preservatives, F. I. D. 76, on Dyes, Chemicals, and Preservatives in Foods, F. I. D. 89, relating to the Use in Foods of Benzoate of Soda and Sulphur Dioxid, F. I. D. 92, on the Use of Copper Salts, and F. I. D. 102, amending F. I. D. 92, have been issued over the signatures of the three Secretaries, constituting decisions on these points pending the completion of investigations and the issuance of final regulations governing the use of such substances. F. I. D. 104 constitutes the final decision on the use of benzoate of soda in foods, and allows such use.

With the exception of these amendments and amplifications the regulations as originally issued remain unchanged, and no additional rules have been adopted, the revision issued under this date merely incorporating the changes enumerated.

JAMES WILSON, Secretary of Agriculture.

Washington, D. C., April 28, 1909.

ORIGINAL LETTER OF TRANSMITTAL.

Washington, D. C., October 16, 1906.

The Secretaries of the Treasury, of Agriculture, and of Commerce and Labor.

Sirs: The Commission appointed to represent your several Departments in the formulation of uniform rules and regulations for the enforcement of the food and drugs act, approved June 30, 1906, has reached a unanimous agreement and respectfully submits the results of its deliberations and recommends their adoption. Very respectfully,

H. W. WILEY.
JAMES L. GERRY.
S. N. D. NORTH.

RULES AND REGULATIONS.

GENERAL.

Regulation 1. Short Title of the Act.

The act, "For preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," approved June 30, 1906, shall be known and referred to as "The Food and Drugs Act, June 30, 1906."

Regulation 2. Original Unbroken Package.

(See also F. I. D. 86 for interpretation of this regulation.)

(Section 2.)

The term "original unbroken package," as used in this act, is the original package, carton, case, can, box, barrel, bottle, phial, or other receptacle put up by the manufacturer, to which the label is attached, or which may be suitable for the attachment of a label, making one complete package of the food or drug article. The original package contemplated includes both the wholesale and the retail package.

Regulation 3. Collection of Samples.

(As amended by F. I. D. 79, October 8, 1907, to take effect November 1, 1907.)

(Section 3.)

Samples of unbroken packages shall be collected only by authorized agents of the Department of Agriculture, or by the health, food, or drug officer of any State, Territory, or the District of Columbia, when commissioned by the Secretary of Agriculture for this purpose.

Samples may be purchased in the open market, and, if in bulk, the marks, brands, or tags upon the package, carton, container, wrapper, or accompanying printed or written matter shall be noted. The collector shall also note the names of the vendor and agent through whom the sale was actually made,

together with the date of the purchase. The collectors shall purchase representative samples.

A sample taken from bulk goods shall be divided into three parts, and each shall be labeled with the identifying marks.

If a package be less than 4 pounds, or in volume less than 2 quarts, three packages shall be purchased, when practicable, and the marks and tags upon each noted as above. When three samples are purchased, one sample shall be delivered to the Bureau of Chemistry and to such chemist or examiner as may be designated by the Secretary of Agriculture; the second and third samples shall be held under seal of the Secretary of Agriculture, who, upon request, shall deliver one of such samples to the party from which purchased or to the party guaranteeing such merchandise.

When it is impracticable to collect three samples, or to divide the sample or samples, the order of delivery above shall obtain, and in case there is a second sample the Secretary of Agriculture may, at his discretion, deliver such sample to parties interested.

All samples shall be sealed by the collector with a seal provided for the purpose.

Regulation 4. Method of Analysis.

(Section 4.)

Unless otherwise directed by the Secretary of Agriculture, the methods of analysis employed shall be those prescribed by the Association of Official Agricultural Chemists and the United States Pharmacopoeia.

Regulation 5. Hearings.

(Section 4.)

(a) When the examination or analysis shows that the provisions of the food and drugs act, June 30, 1906, have been violated, notice of that fact, together with a copy of the findings, shall be furnished to the party or parties from whom the sample was obtained or who executed the guaranty as provided in the food and drugs act, June 30, 1906, and a date shall be fixed at which such party or parties may be heard before the Secretary of Agriculture, or such other official connected with the food and drug inspection service as may be commissioned by him for that purpose. The hearings shall be had at a place, to be designated by the Secretary of Agriculture, most convenient for all parties concerned. These hearings shall be private and confined to questions of fact. The parties interested therein may appear in person or by attorney and may propound proper interrogatories and submit oral or written evidence to show any fault or error in the findings of the analyst or examiner. The Secretary of Agriculture may order a re-examination of the sample or have new samples drawn for further examination.

(b) If the examination or analysis be found correct the Secretary of Agriculture shall give notice to the United States district attorney as prescribed.

(c) Any health, food, or drug officer or agent of any State, Territory, or the District of Columbia who shall obtain satisfactory evidence of any violation of the food and drugs act, June 30, 1906, as provided in section 5 thereof, shall first submit the same to the Secretary of Agriculture, in order that the latter may cause notice to be given to the guarantor or to the party from whom the sample was obtained.

Regulation 6. Publication.

(Section 4.)

(a) When a judgment of the court shall have been rendered there may be a publication of the findings of the examiner or analyst, together with the findings of the court.

(b) This publication may be made in the form of circulars, notices, or bulletins, as the Secretary of Agriculture may direct, not less than thirty days after judgment.

(c) If an appeal be taken from the judgment of the court before such publication, notice of the appeal shall accompany the publication.

Regulation 7. Standards for Drugs.

(Section 7.)

(a) A drug bearing a name recognized in the United States Pharmacopoeia or National Formulary, without any further statement respecting its character, shall be required to conform in strength, quality, and purity to the standards prescribed or indicated for a drug of the same name recognized in the United States Pharmacopoeia or National Formulary, official at the time.

(b) A drug bearing a name recognized in the United States Pharmacopoeia or National Formulary, and branded to show a different standard of strength, quality, or purity, shall not be regarded as adulterated if it conforms to its declared standard.

Regulation 8. Formulas—Proprietary Foods.

(Section 8, last paragraph.)

(a) Manufacturers of proprietary foods are only required to state upon the label the names and percentages of the materials used, in so far as the Scretary of Agriculture may find this to be necessary to secure freedom from adulteration and misbranding.

(b) The factories in which proprietary foods are made shall be open at all reasonable times to the inspection provided for in regulation 16.

Regulation 9. Form of Guaranty.

[As amended December 8, 1908, by F. I. D. 99, to take effect on January 1, 1909; see also F. I. D. 83 for opinion of the Attorney-General on the issue of a guaranty based upon a former guaranty.]

(Section 9.)

(a) No dealer in food or drug products will be liable to prosecution if he can establish that the goods were sold under a guaranty by the wholesaler, manufacturer, jobber, dealer, or other party residing in the United States from whom purchased.

(b) A general guaranty may be filed with the Secretary of Agriculture by the manufacturer or dealer and be given a serial number, which number shall appear on each and every package of goods sold under such guaranty with the words "Guaranteed by [insert name of guarantor] under the food and drugs act, June 30, 1906."

(c) The following form of guaranty is suggested:

I (we) the undersigned do hereby guarantee that the articles of foods or drugs manufactured, packed, distributed, or sold by me (us) [specifying the same as fully as possible] are notadulterated or misbranded within the meaning of the food and drugs act, June 30, 1906.

(Signed in ink.)

_____.

[Name and place of business of wholesaler, dealer, manufacturer, jobber, or other party.]

(d) If the guaranty be not filed with the Secretary of Agriculture as above, it should identify and be attached to the bill of sale, invoice, bill of lading, or other schedule giving the names and quantities of the articles sold.

ADULTERATION.

Regulation 10. Confectionery.

(Section 7.)

(a) Mineral substances of all kinds (except as provided in Regulation 15) are specifically forbidden in confectionery whether they be poisonous or not.

(b) Only harmless colors or flavors shall be added to confectionery.

(c) The term "narcotic drugs" includes all the drugs mentioned in section 8, food and drugs act, June 30, 1906, relating to foods, their derivatives and preparations, and all other drugs of a narcotic nature.

Regulation 11. Substances Mixed and Packed with Foods.

(Section 7, under "Foods.")

No substance may be mixed or packed with a food product which will reduce or lower its quality or strength. Not excluded under this provision are substances properly used in the preparation of food products for clarification or refining, and eliminafed in the futher process of manufacture.

Regulation 12. Coloring, Powdering, Coating, and Staining.

(Section 7, under "Foods.")

(a) Only harmless colors may be used in food products.

(b) The reduction of a substance to a powder to conceal inferiority in character is prohibited.

(c) The term "powdered" means the application of any powdered substance to the exterior portion of articles of food, or the reduction of a substance to a powder.

(d) The term "coated" means the application of any substance to the exterior portion of a food product.

(e) The term "stain" includes any change produced by the addition of any substance to the exterior portion of foods which in any way alters their natural tint.

Regulation 13. Natural Poisonous or Deleterious Ingredients.

(Section 7, paragraph 5, under "Foods.")

Any food product which contains naturally a poisonous or deleterious ingredient does not come within the provisions of the food and drugs act, June 30, 1906, except when the presence of such ingredient is due to filth, putrescence, or decomposition.

Regulation 14. External Application of Preservatives.

(Section 7, paragraph 5, under "Foods," proviso.)

(a) Poisonous or deleterious preservatives shall only be applied externally, and they and the food products shall be of a character which shall not permit the permeation of any of the preservative to the interior, or any portion of the interior, of the product.

(b) When these products are ready for consumption, if any portion of the added preservative shall have penetrated the food product, then the proviso of section 7, paragraph 5, under "Foods," shall not obtain, and such food products shall then be subject to the regulations for food products in general.

(c) The preservative applied must be of such a character that, until removed, the food products are inedible.

Regulation 15. Wholesomeness of Colors and Preservatives.

[As amended to accord with F. I. D. 104. See also F. I. D. 76, 89, 92, 101, and 102 for rulings under this head.]

(Section 7, paragraph 5, under "Foods.")

(a) Respecting the wholesomeness of colors, preservatives, and other substances which are added to foods, the Secretary of Agricultrue shall determine from chemical or other examination, under the authority of the agricultural appropriation act, Public 382, approved June 30, 1906, the names of

those substances which are permitted or inhibited in food products; and such findings, when approved by the Secretary of the Treasury and the Secretary of Commerce and Labor, shall become a part of these regulations.

(b) The Secretary of Agriculture shall determine from time to time, in accordance with the authority conferred by the agricultural appropriation act, Public 382, approved June 30, 1906, the principles which shall guide the use of colors, preservatives, and other substances added to foods; and when concurred in by the Secretary of the Treasury and the Secretary of Commerce and Labor, the principles so established shall become a part of these regulations.

(c) It having been determined that benzoate of soda mixed with food is not deleterious or poisonous and is not injurious to health, no objection will be raised under the food and drugs act to the use in food of benzoate of soda, provided that each container or package of such food is plainly labeled to show the presence and amount of benzoate of soda. Food Inspection Decisions 76 and 89 are amended accordingly.

Regulation 16. Character of the Raw Materials.

(Section 7, paragraph 1, under "Drugs;" paragraph 6, under "Foods.")

(a) The Secretary of Agriculture, when he deems it necessary, shall examine the raw materials used in the manufacture of food and drug products, and determine whether any filthy, decomposed, or putrid substance is used in their preparation.

(b) The Secretary of Agriculture shall make such inspections as often as he may deem necessary.

MISBRANDING.

Regulation 17. Label.

[As amended by F. I. D. 84, January 31, 1908, taking effect February 10, 1908.]
(Section 8.)

(a) The term "label" applies to any printed, pictorial or other matter upon or attached to any package of a food or drug product, or any container thereof subject to the provisions of this act.

(b) The principal label shall consist, first, of all information which the food and drugs act, June 30, 1906, specifically requires, to-wit, the name of the place of manufacture in the case of food compounds or mixtures sold under a distinctive name; statements which show that the articles are compounds, mixtures, or blends; the words "compound," "mixture," or "blend," and words designating substances or their derivatives and proportions required to be named in the case of foods and drugs. All this information shall appear upon the principal label, and should have no intervening descriptive or explanatory reading matter. Second, if the name of the manufacturer and place of manufacture are given, they should also appear upon the principal label. Third,

preferably upon the principal label, in conjunction with the name of the substance, such phrases as "artificially colored," "colored with sulphate of copper," or any other such descriptive phrases necessary to be announced should be conspicuously displayed. Fourth, elsewhere upon the principal label other matter may appear in the discretion of the manufacturer. If the contents are stated in terms of weight or measure, such statement should appear upon the principal label and must be couched in plain terms, as required by Regulation 29.

(c) If the principal label is in a foreign language, all information required by law and such other information as indicated above in (b) shall appear upon it in English. Besides the principal label in the language of the country of production, there may be also one or more other labels, if desired, in other languages, but none of them more prominent than the principal label, and these other labels must bear the information required by law, but not necessarily in English. The size of the type used to declare the information required by the act shall not be smaller than 8-point (brevier) capitals: Provided, That in case the size of the package will not permit the use of 8-point, the size of the type may be reduced proportionately.

(d) Descriptive matter upon the label shall be free from any statement, design, or device regarding the article or the ingredients or substances contained therein, or quality thereof, or place of origin, which is false or misleading in any particular. The term "design" or "device" applies to pictorial matter of every description, and to abbreviations, characters, or signs for weights, measures or names of substances.

(e) An article containing more than one food product or active medicinal agent is misbranded if named after a single constituent.

In the case of drugs the nomenclature employed by the United States Pharmacopoeia and the National Formulary shall obtain.

(f) The use of any false or misleading statement, design, or device appearing on any part of the label shall not be justified by any statement given as the opinion of an expert or other person, nor by any descriptive matter explaining the use of the false or misleading statement given as the opinion of an expert or other person, nor by any descriptive matter explaining the use of the false or misleading statement, design, or device.

Regulation 18. Name and Address of Manufacturer.

(Section 8.)

(a) The name of the manufacturer or producer, or the place where manufactured, except in case of mixtures and compounds having a distinctive name, need not be given upon the label, but if given, must be the true name and the true place. The words "packed for———," "distributed by ———," or some equivalent phrase, shall be added to the label in case the name which

appears upon the label is not that of the actual place of manufacturer or producer, or the name of the place not the actual place of manufacture or production.

(b) When a person, firm, or corporation actually manufactures or produces an article of food or drug in two or more places, the actual place of manufacture or production of each particular package need not be stated on the label except when in the opinion of the Secretary of Agriculture the mention of any such place, to the exclusion of the others, misleads the public.

Regulation 19. Character of Name.

[As amended by .F I. D. 84, January 31, 1908, taking effect February 10, 1908.]

(Section 8.)

(a) A simple or unmixed food or drug product not bearing a distinctive name should be designated by its common name in the English language; or if a drug, by any name recognized in the United States Pharmacopoeia or National Formulary. No further description of the components or qualities is required, except as to content of alcohol, morphine, etc.

(b) The use of a geographical name shall not be permitted in connection with a food or drug product not manufactured or produced in that place, when such name indicates that the article was manufactured or produced in that place.

(c) The use of a geographical name in connection with a food or drug product will not be deemed a misbranding when by reason of long usage it has come to represent a generic term and is used to indicate a style, type, or brand; but in all such cases the State or Territory where any such article is manufactured or produced shall be stated upon the principal label.

(d) A foreign name which is recognized as distinctive of a product of a foreign country shall not be used upon an article of domestic origin except as an indication of the type or style of quality or manufacture, and then only when so qualified that it cannot be offered for sale under the name of a foreign article.

Regulation 20. Distinctive Name.

(Section 8.)

(a) A "distinctive name" is a trade, arbitrary, or fancy name which clearly distinguishes a food product, mixture, or compound from any other food product, mixture, or compound.

(c) A distinctive name shall not misrepresent any property or quality of a mixture or compound.

(d) A distinctive name shall give no false indication of origin, character, or place of manufacture, nor lead the purchaser to suppose that it is any other food or drug product.

Regulation 21. Compounds, Imitations, or Blends Without Distinctive Name.
(Section 8.)

(a) The term "blend" applies to a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only.

(b) If any age is stated, it shall not be that of a single one of its constituents, but shall be the average of all constituents in their respective proportions.

(c) Coloring and flavoring cannot be used for increasing the weight or bulk of a blend.

(d) In order that colors or flavors may not increase the volume or weight of a blend, they are not to be used in quantities exceeding 1 pound to 800 pounds of the blend.

(e) A color or flavor cannot be employed to imitate any natural product or any other product of recognized name and quality.

(f) The term "imitation" applies to any mixture or compound which is a counterfeit or fraudulent simulation of any article of food or drug.

Regulation 22. Articles without a Label.

(Section 8, paragraph 1, under "Drugs;" paragraph 1, under "Foods.")

It is prohibited to sell or offer for sale a food or drug product bearing no label upon the package or no descriptive matter whatever connected with it, either by design, device, or otherwise, if said product be an imitation of or offered for sale under the name of another article.

Regulation 23. Proper Branding not a Complete Guaranty.

Packages which are correctly branded as to character of contents, place of manufacture, name of manufacturer, or otherwise, may be adulterated and hence not entitled to enter into interstate commerce.

Regulation 24. Incompleteness of Branding.

A compound shall be deemed misbranded if the label be incomplete as to the names of the required ingredients. A simple product does not require any further statement than the name or distinctive name thereof, except as provided in Regulations 19 (a) and 28.

Regulation 25. Substitution.
(Sections 7 and 8.)

(a) When a substance of a recognized quality commonly used in the preparation of a food or drug product is replaced by another substance not injurious or deleterious to health, the name of the substituted substance shall appear upon the label.

(b) When any substance which does not reduce, lower, or injuriously affect its quality or strength, is added to a food or drug product, other than that necessary to its manufacture or refining, the label shall bear a statement to that effect.

Regulation 26. Waste Materials.

(Section 8.)

When an article is made up of refuse materials, fragments, or trimmings, the use of the name of the substance from which they are derived, unless accompanied by a statement to that effect, shall be deemed a misbranding. Packages of such materials may be labeled "pieces," "stems," "trimmings," or with some similar appellation.

Regulation 27. Mixtures or Compounds with Distinctive Names.

(Section 8. First proviso under "Foods," paragraph 1.)

(a) The terms "mixtures" and "compounds" are interchangeable and indicate the results of putting together two or more food products.

(b) These mixtures or compounds shall not be imitations of other articles, whether simple, mixt, or compound, or offered for sale under the name of other articles. They shall bear a distinctive name and the name of the place where the mixture or compound has been manufactured or produced.

(c) If the name of the place be one which is found in different States, Territories, or countries, the name of the State, Territory, or country, as well as the name of the place, must be stated.

Regulation 28. Substances named in Drugs or Foods.

(Section 8. Second under "Drugs;" second under "Foods.")

(a) The term "alcohol" is defined to mean common or ethyl alcohol. No other kind of alcohol is permissible in the manufacture of drugs except as specified in the United Sattes Pharmacopoeia or National Formulary.

(b) The words alcohol, morphine, opium, etc., and the quantities and proportions thereof, shall be printed in letters corresponding in size with those prescribed in Regulation 17, paragraph (c).

(c) A drug, or food product except in respect of alcohol, is misbranded in case it fails to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, heroin, cocaine, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, or acetanilide, or any derivative or preparation of any such substances contained therein.

(d) A statement of the maximum quantity or proportion of any such substances present will meet the requirements, provided the maximum stated does not vary materially from the average quantity or proportion.

(e) In case the actual quantity or proportion is stated it shall be the average quantity or proportion with the variations noted in Regulation 29.

(f) The following are the principal derivatives and preparations made from the articles which are required to be named upon the label:

Alcohol, Ethyl: (Cologne spirits, grain alcohol, rectified spirits, spirits, and spirits of wine.)

Sirups, elixirs, pills, and tablets.

Alpha and beta eucaine:

Preparations—

Derivatives—

Aldehyde, ether, ethyl acetate, ethyl nitrite, and paraldehyde.

Preparations containing alcohol—

Bitters, brandies, cordials, elixirs, essences, fluidextracts, spirits, sirups, tinctures, tonics, whiskies, and wines.

Morphine, Alkaloid:

Derivatives—

Apomorphine, dionine, peronine, morphine acetate, hydrochloride, sulphate, and other salts of morphine.

Preparations containing morphine or derivatives of morphine—

Bougies, catarrh snuff, chlorodyne, compound powder of morphine, crayons, elixirs, granules, pills, solutions, sirups, suppositories, tablets, triturates, and troches.

Opium, Gum:

Preparations of opium—

Extracts, denarcotized opium, granulated opium, and powdered opium, bougies, brown mixture, carminative mixtures, crayons, Dover's powder, elixirs, liniments, ointments, paregoric, pills, plasters, sirups, suppositories, tablets, tinctures, troches, vinegars, and wines.

Derivatives—

Codeine, alkaloid, hydrochloride, phosphate, sulphate, and other salts of codeine.

Preparations containing codeine or its salts—

Elixirs, pills, sirups, and tablets.

Cocaine, Alkaloid:

Derivatives—

Cocaine hydrochloride, oleate, and other salts.

Preparations containing cocaine or salts of cocaine—

Coca leaves, catarrh powders, elixirs, extracts, infusion of coca, ointments, paste pencils, pills, solutions, sirups, tablets, tinctures, troches, and wines.

Heroin:

Preparations containing heroin—

Mixtures, ointments, powders, and solutions.

Chloroform:

Preparations containing chloroform—

Chloranodyne, elixirs, emulsions, liniments, mixtures, spirits, and sirups.

Cannabis Indica:

Preparations of cannabis indica—

Corn remedies, extracts, mixtures, pills, powders, tablets, and tinctures.

Chloral hydrate (chloral, U. S. Pharmacopoeia, 1890):

Derivatives—

Chloral acetophenonoxim, chloral alcoholate, chloralamide, chloalimide, Chloral orthoform, chloralose, dormiol, hypnal, and uraline.

Preparations containing chloral hydrate or its derivatives—

Chloral camphorate, elixirs, liniments, mixtures, ointments, suppositories, sirups, and tablets.

Acetanilide (Antifebrine, Phenylacetamide):

Derivatives—

Acetphenetidine, citrophen, diacetanilide, lactophenin, methoxy-acetanilide, methylacetanilide, para-iodoacetanilide, and phenacetine.

Preparations containing acetanilide or derivaties—

Analgesics, antineuralgics, antirheumatics, cachets, capsules, cold remedies, elixirs, granular effervescing salts, headache powders, mixtures, pain remedies, pills, and tablets.

Regulation 29. Statement of Weight or Measure.

(Section 8. Third under "Foods.")

(a) A statement of the weight or measure of the food contained in a package is not required. If any such statement is printed, it shall be a plain and correct statement of the average net weight or volume, either on or immediately above or below the principal label, and of the size of letters specified in Regulation 17.

(b) A reasonable variation from the stated weight for individual packages is permissible, provided this variation is as often above as below the weight or volume stated. This variation shall be determined by the inspector from the changes in the humidity of the atmosphere, from the exposure of the package to evaporation or to absorption of water, and the reasonable variations which attend the filling and weighing or measuring of a package.

Regulation 30. Method of Stating Quantity or Proportion.

(Section 8.)

In the case of alcohol the expression "quantity" or "proportion" shall mean the average percentage by volume in the finished product. In the case of the other ingredients required to be named upon the label, the expression

"quantity" or "proportion" shall mean grains or minims per ounce or fluid ounce, and also, if desired, the metric equivalents therefor, or milligrams per gram or per cubic centimeter, or grams or cubic centimeters per kilogram or per liter; provided that these articles shall not be deemed misbranded if the maximum of quantity or proportion be stated, as required in Regulation 28 (d).

EXPORTS AND IMPORTS OF FOODS AND DRUGS.

Regulation 31. Preparation of Food Products for Export.

(Section 2.)

(a) Food products intended for export may contain added substances not permitted in foods intended for interstate commerce, when the addition of such substances does not conflict with the laws of the countries to which the food products are to be exported and when such substances are added in accordance with the directions of the foreign purchaser or his agent.

(b) The exporter is not required to furnish evidence that goods have been prepared or packed in compliance with the laws of the foreign country to which said goods are intended to be shipped, but such shipment is made at his own risk.

(c) Food products for export under this regulation shall be kept separate and labeled to indicate that they are for export.

(d) If the products are not exported they shall not be allowed to enter interstate commerce.

Regulation 32. Imported Food and Drug Products.

(Section 11.)

(a) Meat and meat food products imported into the United States shall be accompanied by a certificate of official inspection of a character to satisfy the Secretary of Agriculture that they are not dangerous to health, and each package of such articles shall bear a label which shall identify it as covered by the certificate, which certificate shall accompany or be attached to the invoice on which entry is made.

(b) The certificate shall set forth the official position of the inspector and the character of the inspection.

(c) Meat and meat food products as well as all other food and drug products of a kind forbidden entry into or forbidden to be sold, or restricted in sale in the country in which made or from which exported, will be refused admission.

(d) Meat and meat food products which have been inspected and passed through the customs may, if identity is retained, be transported in interstate commerce.

Regulation 33. Declaration.

(Section 11.)

(a) All invoices of food or drug products shipped to the United States shall have attached to them a declaration of the shipper, made before a United States consular officer, as follows:

I, the undersigned, do solemnly and truly declare that I am the———— (Manufacturer. agent, or shipper) ———— of the merchandise herein mentioned and described, and that it consists of food or drug products which contain no added substances injurious to health.

These products were grown in ———— (Country) and manufactured in ———— (Country) by ———— ———— during the year ————, and are exported from ———— (Name of manufacturer) (City) and consigned to ———— (City). The products bear no false labels or marks, contain no (some) added coloring matter or preservative ————, and are not of a character to cause prohibition or restriction in the country where made or from which exported.

Dated at —— this —— day of ——, 19—.

(Signed): ——— ——— ———.

(b) In the case of importations to be entered at New York, Boston, Philadelphia, Chicago, San Francisco, and New Orleans, and other ports where food and drug inspection laboratories shall be established, this declaration shall be attached to the invoice on which entry is made. In other cases the declaration shall be attached to the copy of the invoice sent to the Bureau of Chemistry.

Regulation 34. Denaturing.

[As amended by F. I. D. 93, May 12, 1908.]

(Section 11.)

Unless otherwise declared on the invoice, all substances ordinarily used as food products will be treated as such. Shipments of substances ordinarily used as food products intended for technical purposes should be accompanied by a declaration stating that fact. Such products should be denatured before entry, but denaturing may be allowed under customs supervision with the consent of the Secretary of the Treasury, or the Secretary of the Treasury may release such products without denaturing, under such conditions as may preclude the possibility of their use as food products.

Regulation 35. Bond, Imported Foods, and Drugs.

(Section 11.)

Unexamined packages of food and drug products may be delivered to the consignee prior to the completion of the examination to determine whether

the same are adulterated or misbranded upon the execution of a penal bond by the consignee in the sum of the invoice value of such goods with the duty added, for the return of the goods to customs custody.

Regulation 36. Notification of Violation of the Law.

(Section 11.)

If the sample on analysis or examination be found not to comply with the law, the importer shall be notified of the nature of the violation, the time and place at which final action will be taken upon the question of the exclusion of the shipment, and that he may be present, and submit evidence (Form No. 5), which evidence, with a sample of the article, shall be forwarded to the Bureau of Chemistry at Washington, accompanied by the appropriate report card.

Regulation 37. Appeal to the Secretary of Agriculture and Remuneration.

(Section 11.)

All applications for relief from decisions arising under the execution of the law should be addressed to the Secretary of Agriculture, and all vouchers or accounts for remuneration for samples shall be filed with the chief of the inspection laboratory, who shall forward the same, with his recommendation, to the Department of Agriculture for action.

Regulation 38. Shipment beyond the jurisdiction of the United States.

(Section 11.)

The time allowed the importer for representations regarding the shipment may be extended at his request to permit him to secure such evidence as he desires, provided that this extension of time does not entail any expense to the Department of Agriculture. If at the expiration of this time, in view of the data secured in inspecting the sample and such evidence as may have been submitted by the manufacturers or importers, it appears that the shipment cannot be legally imported into the United States, the Secretary of Agriculture shall request the Secretary of the Treasury to refuse to deliver the shipment in question to the consignee, and to require its reshipment beyond the jurisdiction of the United States.

Regulation 39. Application of Regulations.

These regulations shall not apply to domestic meat and meat food products which are prepared, transported, or sold in interstate or foreign commerce under the meat-inspection law and the regulations of the Secretary of Agriculture made thereunder.

Regulation 40. Alteration and Amendment of Regulations.

These regulations may be altered or amended at any time, without previous notice, with the concurrence of the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor.

The above rules and regulations are hereby adopted.

LESLIE M. SHAW,
Secretary of the Treasury.
JAMES WILSON,
Secretary of Agriculture.
VICTOR H. METCALF,
Secretary of Commerce and Labor.

Washington, D. C., October 17, 1906.

TRADEMARK FORMS.

FORM OF CORPORATIONS.

Know all men by these presents:

That the ———, a corporation duly organized and existing under the laws of the State of ———, and having its office in the City of ———, said State, has adopted for its use a trademark to designate, make known or distinguish a certain article of goods, ware or merchandise by it manufactured or pared, of which the following is a description: ——————— the essential feature ——— of which ——— the ———, as applied to ———; and that the facsimiles presented herewith are true and correct copies thereof.

In testimony whereof, the said corporation has caused this instrument to be signed by its ——— and the seal of said corporation to be hereto attached, at the City of ———, State of ———, this ——— day of ———, 19—.

(Seal) ———————————

(President or other duly authorized officer.)

State of ———, County of ———, } ss.

On this ——— day of ———, 19—, before me personally appeared personally known, who, being by me duly sworn, did say that he is the ——— of the said ———, a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its board of directors, and said ——— acknowledged said instrument to be the free act and deed of said corporation, for the purpose therein stated.

In testimony whereof, I have hereunto set my hand and affixed my seal at my office in the City of ——— the day and year last above written.

My commission expires ———.

———, Notary Public.

FORM FOR INDIVIDUALS OR PARTNERSHIPS.

Know all men by these presents:

That I, ———, residing in the City of ———, State of ———, have adopted for my use a trademark to designate, make known or distinguish a certain article of goods, wares or merchandise by me manufactured or pre pared, of which the following is a description:

———————————————————

the essential feature ——— of which ——— the ———, as applied to

————; and that the facsimiles presented herewith are true and correct copies thereof.

In testimony whereof, I have hereunto set my hand at the City of ————, State of ————, this ———— day of ————, 19—.

————————————

State of ————, }
County of ————, } ss.

On this ———— day of ————, 19—, before me personally appeared ————, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

In testimony whereof, I have hereunto set my hand and affixed my seal at my office in the City of ———— the day and year last above written. My commission expires ————.

————————————, Notary Public.

NOTE—The application for registration must be executed in duplicate. In other words, two originals.

TRADE MARK REGISTRATION.

The common procedure is to employ an attorney whose fee is twenty-five dollars. The Government fee is ten dollars, making thirty-five dollars in all. Sometimes an extra charge is made for drawings, etc. When you get your certificate of registration from the Government it is merely evidence that on a certain day you did a certain thing. In most cases quite as much good may be accomplished by filing with the recorder of deeds of your county or the Secretary of State of the commonwealth in which you reside an application for registration. You can make out the papers yourself—preferably on legal cap and in duplicate, have them certified to by a notary public—and then recorded by your county recorder or by your Secretary of State, the fee is usually one dollar. Herewith are two forms—as used by the Secretary of State of Missouri, the first for corporations, the other for individuals or partnerships. The main point in trade mark ownership is priority of use and this can be as well established in any court of record by the certificate of your county recorder or your Secretary of State, as by the certificate of registration from the United States Patent Office in Washington, D. C. Different states have different laws in regard to trade marks, some states allow the registration thereof in your county or city. Other states require trade marks to be registered in the office of the Secretary of the State in which you reside. For information on this point see your state law relating to trade marks in the revised statutes of your state, every justice of the peace has a copy.

THE NEW FEDERAL TRADE MARK LAW.

The new trade mark act, which was approved by Congress February 20th, 1905, and which takes effect April 1st, 1905, provides for the registration of trade marks used in commerce with foreign nations or among the several States, or with the Indian tribes. The former trade mark law of 1881 provided only for the registration of trade marks used in commerce with foreign nations or with the Indian tribes. In the recent case of Warner against Serle and Hereth (191 U. S., 195), the Supreme Court of the United States held that suit could be brought under the act of 1881 in the United States Courts, only when both the owner of the trade mark and the infringer were using the trade mark in foreign commerce or with the Indian tribes. The registrant of a trade mark under the United States law of 1881 cannot, therefore, bring a suit in the Federal Courts based on his registration, except when the trade mark is used by both parties in commerce with foreign nations or Indian tribes. Suit could be brought in the State Courts, or in the Federal Courts where the parties were citizens of different States, at common law for infringment of a trade mark, but such suit could not be based upon Federal registration.

A number of circulars have recently been published, stating that trade marks registered under the law of 1881 are required by the new law to be re-registered. This is not a fact. All that can be said is that registration under the new law has many advantages over registration under the old law. Some of these advantages are as follows:

1. Trade marks used in interstate commerce may now be registered and suit may be maintained upon such registrations in the Federal Courts, as above stated.

2. Under the new act, applicants are permitted to register their trade marks in the form in which they are used and are not required to designate, as was the practice of the Patent Office under the old law, what are the essential features. Under the new law, therefore, the registration will cover and protect everything the registrant is entitled to, as no supposed essential features of the trade mark under the new act are required to be pointed out.

3. So too, any mark or name, even if not strictly or technically a trade mark, which has been in actual and exclusive use for ten (10) years next preceding the passage of the new act, may be registered.

4. The new law provides for the publication in the Official Gazette of trade marks prior to the registration of same, so that any one desiring to file notice of opposition to the registration of such trade mark may do so. A trade mark registered under the new law will, therefore, have greater weight in trade and in court than one registered under the old law.

5. The new act provides that the Court may, in entering judgment for the plaintiff, increase the actual damages according to the circumstances of the case, not exceeding three times the amount thereof, together with the costs.

6. Where judgment is rendered for the plaintiff and the profits assessed, the plaintiff is required to prove the defendant's sales only. The defendant must prove all elements of cost which are claimed. Under the old law the plaintiff had to prove the defendant's sales and all elements of cost, the latter being matters within the knowledge of the defendant.

7. Under the new law, where verdict is rendered for the plaintiff, the Court has power to order all labels, signs, prints, packages, wrappers and receptacles in the possession of the defendant bearing the trade mark, to be delivered up and destroyed.

8. An injunction obtained by plaintiff in any district of the United States may be served on the defendant anywhere in the United States where he may be found and may be enforced by the Court which granted such injunction or by any other Court of the United States. Under the old law, injunctions granted in one district were operative only in that district, and where defendant begun operations in another district suit had to be brought against him in such other district.

9. The new act provides for giving to foreign owners of trade marks all rights to which they are entitled under treaties with the United States.

10. The old law required a government fee of $25.00 to be paid on filing an application for trade mark. Under the new law the government fee is reduced to $10.00.

By section 30 of the new act it is provided that "All acts and parts of acts inconsistent with this act are hereby repealed except so far as the same may apply to certificates of registration issued" * * * This repeals the old law, but leaves trade marks registered under the old law in the same status in which they were before the passage of the new act.

While the status of registrations under the old law is not disturbed by the new act, the new law has so many advantages that it is thought it will be desirable for the owners of trade marks already registered, who wish to avail themselves of the advantages above pointed out, to re-register under the new law, and for those who have not heretofore registered under the Federal law to do so without delay, because of the many advantages of such registration, and because such registration will serve to prevent persons from registering trade marks, which rightfully belong to registrants, by furnishing a record in the Patent Office for the rejection of any application for the same or an infringing trade mark.

INDEX

Acamuisia—285-288.
Acetanilid Powder Co.—40-265.
Acetone in Inoperable Cancer—314.
Acid Arsenic Solution—114-316.
  Phosphate Solution—59.
  Salicylic Co.—23.
  Stains, To Remove—332-368.
  Tonic—8.
Acne—47.
Adams Cough Cure—13.
Agueine—26.
Ague Preparations—26.
Alabaster, To Clean—332.
Ale, Ginger, Extract—99.
  Ginger, Syrup—99.
Alkaline, Mixture for Gonorrhoea—253.
  Tonic, Mixture—8.
Aletris Cordial—277.
Alkaline Antiseptic—315.
  Arsenic Solution—316.
  Digestive—315.
  Rhubarb and Pancreatin—315.
  Mixture for Gonorrhoea—253.
Almond Meal—308.
Alteratives—1, 2, 3, 4.
Alterative, Indian—1-284.
  Iodides Co.—316.
  Juice—4.
Alum Eye Water—43.
  Poultice—411.
Ambrosia Powder—31.
Ammonia, Acetate of, Solution—114.
  Household—73.
  Uses of—424.
Anaphrodisiac Pills—274.
Anesthetic, Solution—75.
Anatomical Specimens, to Preserve—379.
Anchovy Paste—437.
Aniline, Stains to Remove—333.
Animals—Stuffed, to Clean—333.
Aniseed Balsam—317.
  Cordial—60.
Anodyne—269.
  Cream, for Catarrh—22.
  For Dentists—52-75.
  Toothache—51.
Ant Poison—438.
Antibilious Pills—64.
Anti-Cholera Mixture—41, 42.
  Mixture, Sun—42.
Antikink Pomade—444.
Anti-Malarial Pills—66.
Anti-Pain Powder—40-265.
  Tablets—265, 266.
Anti-Rheumatic Mixture—23.
Anti-Pyretic Elixir—316.
Antisepticina—40.
Antiseptic Dressing—40.
  Mixture—40.
  Powder—291, 316.
  Solution—40.
Aperient Lozenges—31.
  Powder for Horses—157.
Apple Cider—295.
  Extract of—98.
Aqua Anethi—386.
  Anise—386.
  Aurantii—387.
  Camphorae—387.
  Carui—387.
  Chloroformi—387.
  Cinnamomi—387.
  Creasoti—387.
  Foeniculi—387.
  Lauro Cerasi—387.
  Menthae Pip—388.
  Menthae Virid—388.
  Pimentae—388.
  Rosae—388.
Arnica Jelly—100-307.
  Liniment—31, 32.
  Opodeldoc—33.
  Salve—34.
Aromatic Bitters—7.
  Cascara—276.
  Castor Oil—316.
  Ginger Ale—55.
  Ginger Ale Essence—55.
  Waters—386-388.
  Wine—12.
Arsenate of Lead—257.
  of Lead, Solution—257.
Arsenical Pills—64.
  Solution, Alkaline—316.
  Solution, Acid—114-316.
  Solution, Clemens—70.
Artistic Enamel, Black—87.
Asthma Cigarettes—21.
  Cures—20-21.
  Cure, Dick's—20.
  Inhalant—20-21.
  Mixture, Potter's—20.
  Powders—21.
  Remedy—317.
  Remedy, Special—440.
  Syrup—20.

Astringent Tincture—441.
Aquarium Cement—312.
Automobiles, to Preserve—341.

Baby Cough Syrups—317.
Dusting Powder—435.
Quinine, A—26.
Quinine, B—26.
Baking Powder, Alum, 1 Spoon—93.
Alum, 2 Spoons—93-294.
Cream of Tartar—93-294.
General Directions—94.
Lily—257.
Quick Rising—94.
Phosphate, 1 Spoon—93.
Phosphate, 2 Spoons—93.
Phosphate, without Alum—268.
Potash and Sulphate—280.
Salt Rising—94.
Self Rising—94.
Self Rising, Flour—94.
Baldness, Cure for—307.
Hair Tonic for—264.
Ball Blue—272.
Balsam Sulphur—282.
Balm for Pain—63.
of Roses—239.
Balsam of Aniseed—16-317.
Honey and Aniseed—14.
of Sulphur—282.
Banana, Extract of—97.
Bandoline—309.
Barbers Itch Ointment—34-283.
Barometer Solution—82.
Tubes, to Clean—333.
Barrels, to Cleanse—333.
Barsaloux Sauce—93.
Bateman's Drops—328.
Bath Powders—438.
Bay Rum—230.
Concrete—305.
Mixture—230, 231.
Powder—308.
Beading for Spirits—63.
Bed Bug Destroyer—311.
Poison—77.
Beef Celery and Sarsaparilla—4.
Iron and Wine—10-116.
and Malt Wine—53.
Peptonate, Creosote and Guaiac—281.
Beer, Ginger—55, 56.
Ginger, Powders—56.
Herb, Extracts—54.
Hop—56.
Lemon—56.
Maple—56, 57.
Molasses—57.
Beer, Ottawa—57.
Peruvian—57.
Root—57, 58.
Spruce—58.
Table—59.
Benzine, Deodorized—384.
Jelly—384-440.
Petroleum, Purified—311.
Benzoin Emulsion—262.
Bergoline—275.
Oil Spray—22.
Beverage, Preservative for—53.
Bicycle, Cement for Tires—330.
Bijou Cleaning Fluid—384.
Biliousness, Mixture for—64.
Birch Beer Extract—273-289-294.
Bismuth Hair Dye—305.
and Hydrastia Lquid—316.
Mixture—13.
Mixture Co.—25.
Bitters, Aromatic—7.
German Herb—5.
Hop—7.
Bitter Wine of Iron—5-11.
Wine of Iron, Mitchell's—11.
Bitters, Iron Tonic—4, 5.
Orange—6.
Roback's—5.
Samson's—5.
Stomach—273.
Stoughton's—6.
Universal—293.
Walton's—5.
Wild Cherry—6.
Wood's—6.
Wormwood—61.
Wine of Iron—5.
Wine of Iron, Mitchell's—11.
Blackberry, Aromatic Syrup—103.
Black Liquid Shoe Polish—88.
Blackboard Paint, Cheap—444.
Blackberry Brandy—7.
Cordial—7.
Black Cloth, to Clean—342.
Black Currant Lozenges—410.
Blacking Paste, for Shoes—87, 88.
Blackboard, to Remove Grease from—333.
Blankets, to Clean—333-348.
Blistering Ointment, for Horses—204.
Blood Cleanser—2.
Stains, to Remove—333, 334.
and Kidney Tea—28.
and Liver Syrup—4.
Mixture—234.
Mixture, without Iodides—2.
Mixture, Robson's—2.
Purifiers and Alteratives—1, 2, 3, 4.

Blood, Purifying Herbs—3.
Purifying Mixtures—3-284.
Remedy—234.
Renovator—2, 3, 4, 8, 284.
Stains, to Remove—334-336.
Tonic—8.
Blue Black Ink—274.
Bluing Disinfectant—84.
Indigo Wash—84.
Liquid—84.
Stick—257-295.
Boiler Incrustation, to Prevent—312.
Boils, Ointment for—36.
Bones and Ivory, to Clean—334.
Books, to Clean—335.
Boracetanilid—284.
Boracic Acid Powder—13.
Acid Salve—35.
Borax Soap Powder—443.
Borated Talcum—239.
Bordeaux Mixture—253, 254, 255.
Boroglyceride Lanoline—240.
Borosalicylate—46.
Bottle Capping—79.
Bottles, to Clean—336-353.
Brandy, Blackberry—7.
British—63.
Cherry—62.
Coloring—63.
Jersey—54.
Brass, to Clean—85-336, 337, 338, 339.
Instruments, to Clean—337, 338.
Paste for—85, 86.
Brazilian Furniture Polish—266.
Breast Teas—28.
Breath Perfumes—427.
Bricks, to Scour—375.
Brilliantine—247-258-264.
British Brandy—63.
Oils—32.
Britannia Metal, to Clean—339.
Broadcloth, to Remove Stains from—339.
Bromidrosis Zinc Cream for—47.
Brompton Hospital Cough Specific—14.
Bronchelixir—14.
Bronchial Lozenges—411.
Bronchitis Mixture—16-20.
Pills—20.
Potter's—20.
Bromidrosis Remedy—47-429.
Bronze, to Clean—339.
Statuary, to Clean—339.
Powder, Cheap—444.
Bronzing Liquid—293.
Brown Injection—309.
Leather, Paste for—88.
Liquid Shoe Polish—88.
Brown, Shoe Polish, A—88.
Shoe Polish, B—88.
Brunswick Black, for Grates—87.
Brushes, to Wash—339.
Buchu, Brown's—27.
Diuretic Elixir—27-317.
Elixir Co.—27.
Bug Annihilator—270.
Buckthorn Bark Syrup—103.
Burdock Seed Tincture—441.
Bust Developer—252.
Butter Coloring—82-277-282.

Cachous, for Breath—427.
Caffeine Citrate—395.
Hydrobromate—395.
Seidlitz Powders—75.
Cakes, Worm—50.
Calcidin—438.
Tablets—439.
Calculation of Equivalent Weights—392.
Calico and Linen, to Clean—339.
Calisaya Cordial—317.
Bark and Iron Cordial—8.
Essence of—274.
Tonic—7.
Camphor Cream—240.
Ice—240-290.
Mixture, Eclectic—441.
Camphorated Phenol—291.
Canada Pine Injection—262.
Canary Birds' Treatment—203.
Asthma—203.
Diarrhoea—203.
Egg Bound—203.
Food—159.
Red Lice—203.
Sore Feet—203.
Cancer, Acetone in—314.
Cure, McNamara's—310.
Plaster—310.
Candy, Horehound—19.
Worm—50.
Canvas, to Renovate—340.
Capillaire—62.
Capping for Bottles—79.
Carbolic Ointment—35.
Carbolic Salve—35.
Cardboard, to Make Greaseproof—413.
Care of the Eyes—44.
Carminative Mixture—13.
Carnation Pink—272.
Carpets, to Clean—292-360.
Carraway Cordial—60.
Carriages, to Preserve—341.
Cascara, Aromatic—276.
Cordial—9.

Cascara, Fluid Extract—276—441.
Castanea Syrup—104.
Castor Oil, Aromatic—316.
Emulsion—74.
Castrolina—29.
Catarrh Balsam—22.
Cream Anodyne—22.
Cures—21.
Cures—21, 22.
Cure Spray—21.
Inhalants—22-434.
Snuff—22.
Cathartic Elixir Co.—318.
Tablets Cascara—281.
Catsup, Tomato—281.
Walnut—437.
Cattle, Colds—163, 164.
Condiment—156.
Diarrhoea—165, 179.
Eye Disease—180.
Fardel Bound—180.
Fattening Powders—158.
Foot and Mouth Disease—180.
Hoven—160-180.
Inflammation of Brain—181.
Inflammation of Kidneys—181.
Inflammation of Udder—181.
Jaundice—170-182.
Lice—182.
Milk Bloody—182.
Milk Blue—182.
Milk Fever—182.
Overeating—183.
Quinsey—184.
Redwater—184.
Rheumatism—185.
Ringworm—185.
Scab—185.
Stoppage—185.
Tailworm—186.
Tapeworm—186.
Thrush in Calves—186.
Tonic—186.
White Scour—186.
Celery, Beef and Sarsparilla—4.
Compound 11—265.
Caffeine Co.—396.
Nervine—261-318.
Salt—91.
Vinegar—437.
Cement—289.
Aquarium—312.
for Bicycle Tires—330.
Casein—81.
China—82.
for China and Glass Letters—312.
for Porcelain Letters—82.
for Metals—79, 80.
Cement for Mica— 80.
for Microscopes—80.
for Minerals—80.
Mohr's—80.
Porcelain and Glass—80-289.
Rubber—312.
Tires—330.
Centigrade to Fahrenheit—295.
Cerate, Indian—39.
Chairs, Cane Seat Cleaner—340.
Chamois Skins, to Cleanse—263.
Chapped Hands and Face—247.
Ointment for—36.
Charcoal Tooth Paste—251.
Chartreuse—55.
Cheap Blood Mixture—4.
Cheltenham Salts—395.
Effervescing—395.
Cherridyne—End of foot notes.
Cherry Brandy—62.
Cough Cure—17.
and Horehound—17.
Tooth Paste—251.
Chewing Gum—268, 269.
Chilblain Cream—44, 45, 46.
Cures—46.
Liniments—44, 45.
Ointment—45, 46.
Chionanthia Co.—318.
Cooling Powders—49.
Children's Cough Syrup—13-328.
Remedies—12-49.
Soothing Powders—49.
Whooping Cough Mixture—13.
Whooping Cough Powders—49.
Chill Breaker, Dr. Earley's—294.
Chili Con Carne—271.
Chill Cure, Jackson's—273.
Cure Tablets—295.
Powder, Tasteless—27.
Tonic—27-310.
Tonic, without Arsenic—310.
China Cement—82.
Chloral Compound—318.
Chlorodynes and Anodynes—74, 75-273.
Chocolate Coating—270.
Quinine—318.
Cholera Cramps—41.
Drops, Thielman's—41.
Mixture, Sun—42.
Chronic Constipation Pills—64.
Gastritis—267.
Chrysarobin Ointment—211.
Cider—295-297.
Cinchona and Iron Mixture—131.
Wine—117.
Cinnamon Cordial—62.
Extract—97.
Citrate of Magnesia Solution—73.

Cleansing Dough—289, 290.
Fluid—253.
Bijou—384.
Powders—384.
Fluid, Bijou—384.
Powders—384.
and Renovating—332-375-382.
Cleanser for Upholstery—292.
Cloth, Black, to Clean—342.
Black, to Revive—342.
Cleaning Compound—342.
Clothes, to Brush—342.
Clove Cordial—60.
Extract of—97.
Coca Wine—9, 10.
Leaves Cordial—8.
Wine—9.
Cochineal Solution—71.
Cocoanut Cream, for the Hair—248.
Shaving Cream—309.
Cockroach Exterminator—77.
Codeine Cough Syrup—16.
Cod Liver Oil Emulsion—265.
Coins and Medals, to Clean—342.
Cold Cream—240-263.
Tablets—281.
Cole's Lotion—412.
Colic Cure, Roosevelt's—265.
Draught for Horses, A—160.
Liniment—33.
Mixture for Infants, Hall's—328.
Colloid Styptic—72.
Cologne Water Mixture—227.
Waters—226, 227.
American—227.
Extra Fine—226.
Fine—227.
Lafayette—226.
Mixture, A—227.
Mixture, B—227.
Vermont—226.
Waters—227.
Windsor—226.
Colored Fires—330, 331.
Coloring for Brandy—63.
for Butter and Cheese—82-277-282.
Curtains—344.
for Extracts—97.
for Glass Jars and Windows—413.
Colors, to Harmonize—426.
Colorless Hydrastis—70.
Coloring for Liqueurs—62, 63.
Color, to Restore—342.
Coltsfoot Lozenges—410.
Combs, to Clean—343.
Complexion Cleansers—434, 435.
Cream—319.
Powder—304.
Complexion, Powder Tablet—304.
Compressed Tablets, to Make—396-400.
Material to Prepare—402-406.
Concentrated Perfumes—297, 298.
Concrete Perfumes—308.
Condiment, Cattle—156.
Condition Powders—155, 156.
Powders, Harvey's—156.
Consumption Cure, Hoff's—268.
Inhalant—412.
Cooling and Teething Powders, for Children—48.
Copaiba, Cubeb and Buchu—42.
Emulsion—287.
Mixture—42.
Solidified—43.
Soluble—42.
Copper, to Clean—343.
Oleate, for Freckles—242.
Copying Ink, Hektograph—332.
Pad, Hektograph—331.
Coral, to Clean—343.
Cordial, Aniseed—60.
Calisaya—317.
Capillaire—62.
Carraway—60.
Cascara—9.
Cherry Brandy—62.
Cinnamon—62.
Cloves—60.
Coca—8.
Diarrhoea—40, 41-271-320.
Gingeretta—61.
Godfrey's—328.
Lemonade—62.
Lovage—62.
Neutralizing—76.
Noyeau—61.
Peppermint—60.
Raspberry—61.
Rum Shrub—60-437.
Usquebaugh—62.
Corn Cures—46, 47.
Salves—46, 47.
Solvent—46.
and Wart Eradicator—47.
Cosmetic Gloves—242.
Cough Balls, for Horses—158.
Balsam—16.
Coughs, Colds, etc.—13.
Cough Cure, Adams—13.
Drops—19.
Mixtures—13, 14, 15-17.
Mixture, for Adults—13.
Mixtures, for Dogs—160.
No More Lozenges—410.
Powder, for Horses—160.
Remedies—13.

Cough Remedy, without Opium—17.
Syrup, Baby's—316.
Syrup, Children's—17, 18-328.
Syrup, Cubebs—19.
Syrup, Standard—14.
Syrup, Vegetable—16.
Crab Apple—272.
Crape, to Clean—343.
to Renovate—343.
Cream Balsam—306.
Cold, Glenn's—240.
Camphor Liniment—33-296.
Chapped Hands—296.
Complexion—319.
Cucumber—306.
Dandruff—307.
Dentifrice—269.
Disappearing—304.
Frostilline—239.
for Furniture—88, 89.
for Kid Gloves—384.
Liniment—319.
Massage—301-428.
of Roses—239.
Shaving—248.
Soda Powder—31.
Witch Hazel—239, 240.
Cresol, Alkaline—319.
Cresote, Emulsion of—26.
Emulsion of, Cod Liver Oil—26.
Gargle—25.
and Heroin—319-428.
Ointment—39.
Preparations—25, 26.
Wine—25.
Crimson Marking Ink—83.
Crocks and Jars, to Remove Grease from—359.
Croft's Table Sauce—91.
Croup and Whooping Cough Syrup—319.
Cubeb Cough Syrup—19.
Paste—43.
Cucumber Cream—306.
Juice—306.
Curacoa Liqueur—53.
Curcumpino Inhalant—412.
Currant Lozenges—410.
Curry Powder—90.
Curtains, to Clean—343.
to Color, Starch—344.
Custard, Condensed—261.
Powder—90.
Cyclists' Universal Oil—33.

Dandruff—247-272-298-307-309.
Death on Rats—77.
Decoctions, to Prepare—329.
Delmonico Sauce—92.
Dental Obtundent—52.
Preparations—251.
Tooth Paste, Charcoal—251.
Tooth Paste, Cherry—251.
Tooth Paste, Rose—251.
Tooth Powder, Carbolic—252.
Tooth Powder, Creme—269.
Tooth Powder, Fragrant—251.
Tooth Powder, Quinine—252.
Tooth Powder, Saponaceous—251.
Tooth Wash, Fragrant—252.
Tooth Wash, Saponaceous—252.
Deodorized Benzine—384.
Depilatory—252-263-295.
Diamonds, to Clean—344.
Diarrhoea, Children—41.
Cordial—40-271-320.
Cordial, Squibbs'—40-320.
Mixture, for Adults and Children—41.
Mixture, Loomis—41.
Mixture, Thielman's—41.
Mixture, Velpeau's—41.
Dick's Asthma Cure—20.
Digestive Pastilles, Borivent—25.
Pills—65.
Powder—291.
Relish—92.
Digitalis Elixir Co.—292-320.
Tincture—292.
Dioscorea Mixture—9.
Disappearing Cream—304.
Disinfectants—414-422.
Disinfective Wash, Blue—84.
Disinfecting Rooms—253-414-422.
Distemper, Mixture, Dogs, A—159.
Mixture, Dogs, B—159.
Diuretic Drops—263.
Mixture, Urona—265.
Urona—265.
Dobell's Solution—282.
Dog Bites—194.
Cough Mixture—160.
Cholera—191.
Convulsions—192.
Debility—192.
Diseases of—191-194.
Distemper—159-192.
Fits—192.
Fractures—193.
Mange Pills—159.
Pills—192.
Pleurisy—193.
Poisoning—193.
Rabies—494.
Tapeworm—194.
Tonic—194.
Worms—194.

Donovan's Solution—74.
Dough, for Cleansing Paper—289, 290.
Dover's Powders Syrup—262.
Drawing Instruments, to Clean—344.

Dysentery Cure—328.
East India Sauce—92.
Eczema Cream—320.
Lotion—320.
Mixture—3.
Remedies—246.
Effervescing Preparations—29, 30-393 to 396.
Salts—394, 395, 396.
Egg Preserver—413.
Producing Food—156-159.
Shampoo—269-438.
Electric Liniment—292.
Elixir, Acid Salicylic Co. No. 1—326.
Acid Salicylic Co. No. 2—326.
Aletris—315.
Alkaline, Rhubarb and Pancreatin—315.
Ammonium Valerianate—119.
Ammonium Valerianate Cinchonidine, Quinine and Strychnine—119.
Ammonium Valerianate Cinchonidine and Strychnine—119.
Ammonium Valerianate and Iron—119.
Ammonium Valerianate, I., Q. and S.—119.
Antipyretic—316.
Aromatic—314.
Arsenic and Quinine—120-320.
Arsenic and Strychnine—120-320.
Aurantii—120.
Beef—120.
Beef and Iron—120.
Beef, Iron and Malt—120.
Berberine—121.
Berberine and Iron—121.
Bismuth—121.
Bismuth and Cinchona—121, 122.
Bismuth, Cinchona and Pepsin—122.
Bismuth and Gentian—123.
Bismuth, Iron, Pepsin and Strychnine—122.
Bismuth and Iron—124.
Bismuth, Iron, Pepsin and Quinine 124.
Bismuth, Gentian, Iron and Strychnine—123.
Bismuth, Gentian and Strychnine —123.
Bismuth, Goldenseal and Iron—123.
Elixir, Bismuth and Goldenseal—123.
Bismuth, Nux Vomica and Pepsin —124.
Bismuth and Pancreatin—125.
Bitter—125.
Blackberry—125.
Black Cohosh—125.
Black Haw—125.
Black Haw Co.—126.
Blue Flag—126.
Blue Flag and Wahoo—126.
Bromides 3—126.
Bromides 5—126.
Bromides 6—126.
Bromide of Zinc—126.
Buchu and Juniper Co.—126, 127.
Buchu, Juniper and Potash Acetate—127-317.
Buchu, Juniper, Uva Ursi and Potash Acetate—127.
Buchu and Pareira Brava—127.
Buchu and Pareira Brava Co.—127.
Buckthorn and Senna—127.
Calcium Bromides with Iodides—128.
Calcium Lactophosphate with Cinchona—128.
Calcium Phosphate—128.
Calcium and Sodium Hypophosphite with Malt—127.
Calcium and Sodium Hypophosphite with Tar—127.
Cascara with Sodium Salicylate—128.
Castillon's—128.
Catharticum—318.
Celery Compound—318.
Celery and Guarana—128.
Cherries—128.
Cherries, Calcium and Sodium Hypophosphites—129.
Chirata—129.
Chionanthia Co.—318.
Chloral Hydrate—132-129-318.
Chloral Compound—318.
Chlorides of Arsenic, Mercury and Iron—129.
Chlorides of Four—121.
Chlorides of Arsenic, Iron and Mercury—129.
Chlorides—1, 2, 3, 4, 5-71-129-321.
Cinchona Co.—130.
Cinchona Detannated—129.
Cinchona, Gentian and Iron Malate—130.
Cinchona, Iron and Phosphorus—130.
Cinchona and Protoxide of Iron—130.

Elixir, Cinchona and Pepsin—130.
Cinchona and Pepsin, B—130, 131.
Cinchona with Phosphates, A—131.
Cinchona with Phosphates, B—131.
Cinchona with Strychnine—131.
Cinchonidine—131.
Cinchonidine, Iron, Quinine and Strychnine—119.
Cinchonidine and Iron—131.
Cinchonidine, Iron and Strychnine—131.
Coca and Phosphorus—131.
Codeine—132.
Codeine and Terpin Hydrate—132.
Corydalis Co.—132.
Cramp Bark Co.—132.
Creosote and Heroin—319.
Croton Chloral Hydrate—132.
Croton Chloral Hydrate and Quinine—132.
Damiana, Iron, Nux Vomica and Phosphorus—133.
Damiana, Iron and Phosphorus—133.
Damiana, Nux Vomica and Phosphorus—133.
Damiana and Phosphorus—133.
Damiana, Phosphorus and Strychnine—133.
Dandelion—134.
Dandelion Co., A—134.
Dandelion Co., B—134.
Dandelion Co., C—134.
Dewberry Root—134.
Digitalis Co.—292-320.
Emmenagogue—134.
Five Bromides—320, 321.
Flavor—135.
Galls, Aromatic—135.
De Garus, A—135.
De Garus, B—135.
Gentian—136.
Gentian Co., A, B, C—136.
Gentian and Iron—321.
Gentian and Iron Phosphates, Nux Vomica and Quassia—137.
Gentian and Phosphorus—137.
Gentian and Pyrophosphate of Iron—136.
Glycerole of Heroin Co.—321.
Glycerophosphates—321.
Golden Seal—137.
Guaiac—137.
Guarana—137.
Helonias—137.
Helonias Co.—138.
Hypophosphites Iron and Quinine—138.
Elixir, Iodide of Potassium Co.—138, 139.
Iodides, Six—138.
Iron, Pepsin and Quinine—139.
Iron Peptonate—140.
Iron Phosphate, Quinine and Strychnine, A—140.
Iron Phosphate, Quinine and Strychnine, B—140.
Iron Protoxide—141.
Iron Pyrophosphate, Quinine and Strychnine—141.
Iron, Quinine and Arsenic—139.
Iron Quinine Citrate—139.
Iron, Quinine and Strychnine Phosphate—141-323.
Iron Salicylates—141.
Iron Salicylate Compound—142.
Iron Valerianate—142.
Iron and Wild Cherry—139.
Kola—142.
Lactated Pepsin—324.
Licorice, Aromatic, A and B—142.
Licorice Compound—143.
Long Life—143.
Lupulin—143.
Lupulin and Soda Bromide—143.
Malt—144.
Malt and Pepsin—144.
Manaca and Salicylates—144.
Matico Co.—144.
Morphine—266.
Morphine Valerianate—144.
Orange—144.
Orange Co.—144.
Pancreas—145.
Pancreatine—145.
Pancreatin, Bismuth and Pepsin—145.
Pancreatin and Pepsin—145.
Papaine—146.
Paraldehyde—146.
Pareira Brava—146.
Pectoral—16.
Pepsin—146.
Pepsin Co., A—146.
Pepsin Co., B—147.
Pepsin, Lactated—324.
Pepsin and Quinine—147.
Pepsin, Quinine and Strychnine—147.
Pepsin and Strychnine—147.
Pepsin and Wafer Ash—147.
Phosphorus, A—147.
Phosphorus, B—148.
Phosphorus Compound—148.
Phosphorus, Quinine and Strychnine—148.
Phosphorus and Strychnine—148.

Elixir, Poppy Compound—325.
Pannonic—148.
Quinine Bisulphate—149.
Quinine and Strychnine Valerianate—149.
Quinine Valerianate—149.
Rhubarb, Aromatic—149.
Rhubarb and Potassium—150.
Rhubarb and Potassium, with Pancreatin—149.
Rhubarb, Magnesia and Senna—150.
Rhubarb and Senna—150.
Salicylic Acid Co.—150-326.
Saw Palmetto and Pichi—151.
Saw Palmetto and Sandalwood—151-326.
Senna, A—150.
Senna, B—151.
Senna Co.—151.
Simple—135.
Six Bromides—126.
Sumbul—151.
Sumbul Co.—151.
Sumbul Valerianate Co.—151.
Terpin Hydrate—152-327.
Three Bromides—126.
Triple Valerianate—152.
Vita Valorous—292.
Wafer Ash—152.
Wahoo—152.
White Pine Co.—152.
Wild Cherry—152.
Yerba, Aromatic—153.
Yerba, Santa—153.
Yerba, Santa Co.—153.
Zinc Bromide—126.
Embalming Fluid—277.
Embrocations—158.
Emery, to Clean—346.
Emulsifying, with Acamulsia—285-288.
Emulsion of Benzoin—262.
of Castor Oil—74.
of Cod Liver Oil—26-264-286-280
of Copaiba—287, 288.
of Creosote—26.
of Salol—287.
of Sandalwood—42.
for Tapeworm—51.
for Turpentine—287.
Enamel, for Grates and Stoves—87.
English Horse Liniment—158.
Engravings, to Clean—345, 346.
Epithelioma Plaster—310.
Equivalent Weights, to Calculate—392 393.
Essence of Calisaya—274.
Essence of Santal, with Buchu and Cubebs—42.
Etching Stamp, for Glass—266.
Extract, Apple—98.
Banana—97.
Beef, Celery and Sarsaparilla—4.
Celery—98.
Cinnamon—97.
Cloves—97.
Ginger—98, 99.
Ginger, Aromatic—98.
Ginger Ale—99.
Ginger, Soluble—98.
Ginger Ale, Soluble—98.
Ginger Ale, Aromatic, Soluble—98.
Ginger Ale, Syrup—99.
Lemon, Soluble—261-274-325.
Malt—99.
Mead, Soluble—99.
Mead Syrup—99.
Orange—95.
Orange, Soluble—95.
Peach—98.
Peppermint—97.
Pineapple—97.
Raspberry—96.
Rose—98.
Sarsaparilla—284.
Soap Bark—99.
Strawberry—97.
Tolu, Soluble—100.
Vanilla—95, 96.
Vanilla, Cheap—95.
Vanilla, from Vanillin—96.
Vanilla, from Vanillin and Coumarin—96.
Expectorants, Stoke's—441.
Eye Salves—37-285.
Salve, Golden—285.
Salve—Magic—295.
Water—43.
Eyes, Care of—44.

Face Lotion—313.
Powders—238, 239-435.
Powder, Borated—239.
Powder, Fatted—305.
Powder, Invisible—238.
Powder, Phantom—239.
Powder, Rose—239.
Powder, Violet—238.
Tablets—436.
Fahrenheit to Centigrade—295.
Feathers, to Clean—347, 348.
Febromelline—282.
Fig Syrup—29.
Fining, for Ale and Porter—64.
for Gin—64.
for Port—63.

Finings, for Sherry—63.
for Whiskey—64.
Finger Marks, to Remove—336.
Tip, Coloring—436.
Fire Extinguishers—311.
Five Bromides—320.
Fireproofing, Solution—311.
Flannels, to Clean—348, 349.
Flashlight Powder—312.
Flavoring Extract Powders—296.
Fleckenwasser—349.
Florida Water—227, 228.
Water, Mixture—228.
Flour, Self Raising—294.
Fluid, Lightning—22.
Viburnum—9.
Fly Lotion—274.
Paint—78-371.
Paper, Sizing for—77.
Paper, Sticky—77.
Poisons—77-438.
Paper, non-Poisonous—438.
Specks, to Remove from Brass—349.
Specks, to Remove from Bronze—349.
Specks, to Remove from Gilding—349.
Specks, to Remove from Frames—349.
Foam, for Aerated Waters—54.
Soap Bark Extract—54.
Food and Drugs Act—462-487.
Foot Powder—47-282-290, 291.
Four Chlorides, Disinfectant—89.
Fowlers' Solution—73, 74.
Fox Marks—335.
Frames, to Renovate—351, 352.
Freckle Lotion—309.
Remedies—240, 241, 242-304.
French Polish—88.
Freezing Mixture—311, 312.
Frost Bites—283.
Frosted Cream—278, 279.
Frostilline Cream—239.
Fruit Juices—94, 95.
Nectar—292.
Preservative—99.
Saline—30.
and Wine Stains, to Remove—350.
Fumigating Pastilles—78-237.
Pastilles, Insecticides—237.
Perfumes—237.
Ribbon—237.
Fungicides and Insecticides—253-257.
Furniture, Appearance to Improve—350, 351.
Cream, A—88.
Cream, B—89.
Furniture, Paste— 89.
Polish—266-351.
Polish, French—88.
Furs, to Clean—351.

Gaduol, Rock and Rye—74.
Wine of—74-321.
Gargles and Wash—262.
Gastritis—267.
Geese, Diseases of—201.
Diarrhoea—201.
Gnats and Fleas—201.
Lice—201.
Mortality—201.
Pip—201.
Swelling Crop—201.
German Herb Bitters—5.
Herb Tea—28.
Oil, Liniment—31.
Red Drops—71.
Gilding Powder—85-444.
Gin, to Make—64.
Finings for—64.
Flavoring—63.
Ginger Ale Essence—55-99.
Ale Extract—99.
Ale Extract, Aromatic—55.
Ale Syrup—99.
Beer—55, 56.
Beer, Powder—55, 56.
Wine—53-275.
Gingeretta—61.
Glass, Cleaning—352, 353.
Etching—266.
Polisher—438.
Gleet, Injection for—43.
Gloss Starch—270-384, 385.
Gloves, to Clean—354, 355.
Glover's Iron Tonic—5.
Glue—81.
Banknote—81.
Bookbinders'—81.
Caseine—81.
Compound—82.
Liquid—82-330.
Stick—82.
Waterproof—82.
Glycerine and Honey Jelly—100.
Iodurette—72.
Jelly, A and B—100.
Ointment—35.
Tonic Co.—322.
Glycerite of Alum—153.
of Borax—153.
of Boric and Tannic Acid—153.
of Chloroform—154.
of Creosote—154.
of Gallic Acid—154.
of Lead Subacetate—154.

Glycerite of Starch—154.
Glycerole of Heroin Co.—321.
of Pepsin—266-324.
of Pepsin and Rhubarb—292.
Glycerophosphates, Syrup of—321.
Goat, Constipation—190.
Cough—190.
Dropsy—190.
Exhaustion—190.
Eye Diseases—190..
Giddiness—190.
Internal Inflammation—190.
Red Water—191.
Scab or Itch—191.
Godfrey's Cordial—328.
Gold Cleaning, Dull—356.
Detergent—356.
Lace, to Wash—356.
and Silver Stains, to Remove—356.
Gonorrhoea Mixtures—42, 43-264.
Gout Cure, Thomas'—23.
Granular Effervescent Salts—394-396.
Cheltenham—395.
Citrate Caffeine—395.
Grape Juice—289.
Grates, Enamel for—87.
Enamel, Artistic—87.
Gravel, Pills for—65.
Gravity, Specific—329.
Grease Extractor—357-359.
Spots, to Remove—336-359.
Guaiac and Creosote Tonic—322.
Guarantee Number, to Obtain—429.
Gum Spirit, for Attaching Mustaches, etc.—437.
Toothache—51.
Gutta Percha, to Clean—359.

Haarlem Oil—282.
Hair Preparations—249.
Bismuth Hair Dye—250-305.
Cocoanut Cream—248.
Colorers—250.
Curling Fluid—293-412-444.
Dye—249, 250-306-428.
Falling—306.
Grower, Teaberry—314.
Oil, Perfume for—249.
Persian Balm, Color—307.
Regenerator—306.
Renewer—249.
Restorer, Warren's—306.
Tea—307.
Tonic, Jaborandi—249.
Tonic, Jaborandi and Quinine—249.
Tonic, Quinine—309.
Quinine Strengthener—307-314.
Walnut Juice Dye—428.
Hair, Warren's Restorer—306.
Hall's Solution of Strychnine—72.
Colic Mixture—328.
Hamburg Breast Tea—28.
Harmless Headache Remedy—293.
Harrogate Salts—29.
Hats, to Clean—359.
Headache Capsules—25.
Mixtures for—25.
Powders—24, 25-275.
Remedies—24, 25.
Remedy, Harmless—293.
Hektograph Copying Ink—332.
Copying Pad—331.
Hellebore Insecticide—257.
Herb Beer Extract—54.
Bitters, German—5.
Blood Purifying—3.
Hepatic Stimulant—322.
Hexa Tropine—322.
Hive Mixture—3-265.
Syrup and Eucalyptus Co.—265-322.
Hoarhound Candy—195-199.
Hoff's Consumption Cure—268.
Hog Diseases—19.
Powders—157, 158.
Honey of Rose—154.
of Rose with Borax—154.
of Rose with Salicylic Acid—155.
of Rose with Tannic Acid—155.
Hop Ale—279.
Ale Essence—280.
Beer—51-54-56.
Bitters—7.
Stout—54.
Tonic—7.
Horse Blister—158.
Blistering Ointment—161.
Colic Draught, A—160.
Colic Draught, B—160.
Colic Drench—161.
Cough Balls—158.
Cough Powders, A—160.
Cough Powders, B—160.
Horses and Cattle, Diseases of—162.
Abdominal Dropsy—163.
Administration of Medicine—162.
Appoplexy—163.
Bleymes and Bruises—163.
Blister—161.
Bruises—158.
Capped Hocks—163.
Catarrh—163.
Cold in Head—163.
Colic Drench—161.
Constipation—185.
Corns—164.
Coughs—161-164.

Horses and Cattle, Cowpox—179.
Cracked Heels—161-165.
Cystitis—165.
Diarrhoea—165-179.
Diarrhoea, Chronic—166.
Dysentery—166.
Eczema—166.
Enteritis—166.
Eye Disease—180.
Farcy—167.
Fardel Bound—180.
Fattening Powder—158.
Fever—167.
Fly Blisters—161.
Founder—168.
Foot Disease—180.
Foot and Mouth—180.
Glanders—168.
Grease—169.
Gripes or Colic—169.
Healing Lotion—161.
Hoof Ointments—169-174.
Hoven—160-181.
Inflammation of Brain—181.
Inflammation of Kidneys and Udder—181.
Inflammation of Larynx—164.
Influenza—160.
Insect Bites—158.
Jaundice—170-182.
Lice—182.
Liniment, English—158.
Liniment, K. K. K.—158.
Liniment, Throat—160.
Liniment, Wire Fence—158.
Ointment for Grease and Cracked Heels—161.
Open Joints—170.
Ophthalmia—171.
Overeating—183.
Pleurisy—165-171.
Pneumonia—165-172.
Pole Evil—172.
Powders—155, 156, 157-160.
Pulmonary Catarrh—172.
Purgative—172.
Pursiness—173.
Quinsey—173-184.
Quittor—173.
Redwater—184.
Remedy for Veterinary Purposes—161.
Ringworm—185.
Rheumatism—185.
Sandcrack—173.
Seedy Toe—174.
Sleep Staggers—175.
Sore Shoulders—174.
Sores in Mouth—175.
Horses and Cattle, Spavin Cure—158.
Sprain—175.
Stimulating White Liniment—160.
Stomach Staggers—175.
Stoppage—185.
Strangles—176.
Tailworm—186.
Tapeworm—186.
Tetanus or Lockjaw—176.
Throat Liniment—160.
Treatment—164.
Thrush—177.
Thrush in Calves—186.
Vives—177.
Weed—177.
White Scour—186.
Worms—177.
Wounds, General—177.
Household Ammonia—73.
Hydrangea, Lithiated—73-323.
Hydrastis, Colorless—323.
Hydriodic Acid—391, 392.
Acid Syrup—258.
Hydrobromic Acid—388, 389, 390.
Caffeine—395.
Hydromel—155.

Ice Cream Foam, for Bulking—313.
Cream Powder, Assorted Flavors—313.
Incense, for Churches—76-444.
Indelible Ink, Black—83-332.
Ink, Crimson—83.
Indian Alterative—1-284.
Liniment—32.
Indigestion Remedy—22-25.
Infants' Colic Mixture—328.
Food—82, 83-331.
Linctus—12.
Powder—239.
Influenza Syrup—17.
Ingrowing Toe Nails—265.
Infusion Tamarack Bark—327.
Inhalants—20, 21, 22-434.
Inhalant, for Consumption—19-412.
Injection, Brown—309.
Gleet—43.
Gonorrhoea—43-309.
Red Wash—43.
Yellow—309.
Ink, Alizarine—359.
Black Marking—332.
Blue Black—274.
Bottles, to Clean—336.
Cheap Blue Black—83.
Copying, Aniline—83.
Copying, Hektograph—332.
Crimson, Marking—83.
Powder—83.

Ink, Shoemakers'—411, 412.
Stains, to Remove—268-276-360, 361.
Violet, Stamp—83.
Insecticides—253-257.
Nursery—78.
Pastilles—78.
Roaches and Beetles—77-263-295.
Insect Bites, Cure for—158.
Powder, Patent—76.
Invisible Writing, on Glass—79.
Iodide of Ammonia Liniment—32.
Iodides, Alterative Compound—316.
Iodide of Iron Ointment—35.
of Lime—440.
of Lime Tablets—440.
of Sulphur Ointment—323.
of Potash Ointment—36.
Iodine, Decolorized—293.
Liquid—293.
Ointment—35.
Tincture Co.—294.
Iodized Phenol—320.
Iodurétted Glycerine—72.
Iron Tonic Bitters—4, 5.
Tonic Cordial, Glover's—5.
Manganese and Pepsin Solution—323.
Iron, Manganese and Pepsin Solution, Arsenated—323.
and Steel, to Clean—361.
and Quinine Tonic—7.
Bitter Wine of—5.
Itch Ointment—34-36-283.
Salve—36.

Javelle Water—443.
Jelly, Arnica—100-307.
Benzine—384-443.
Glycerine, A—100.
Glycerine, B—100.
Glycerine and Honey—10-308.
Marigold—308.
Raspberry, Conc'd.—279.
Table, Conc'd.—257.
Oxide of Zinc—100.
Witch Hazel and Honey—308.
Jersey Brandy—54.
Jet, to Clean—360.

Kamnafuga—40.
Kastagon Liniment—292.
K. K. K. Horse Liniment—158.
Kerosene Emulsion—257.
Kid Reviving Cream—384.
Kidney and Liver Cure—28.
and Liver Medicine—28.
and Liver Salt—265.
Knives, to Remove Stains from—360
Knot Filler, Patent—88.
Koka Fruita—270.
Toilet Cream—295.
Kola Champagne Essence—55.
Coca Wine—10.
Elixir—55.
Syrup—426, 427.
Koumyss, Artificial—437.
Kreosote and Heroin Co.—428.

Labarraques Solution—438.
Laboratory Notes—445, 446.
Lace, to Clean—362, 363.
Gold and Silver—362.
Lacquers—85.
Lactated Pepsin Elixir—324.
Lafayette Mixture—282.
La Grippe Cure—274.
Latin Terms in Prescriptions—447-461.
Lavender Spirits Co.—266.
Water—228.
Laxatives and Aperients—29.
Laxative, Lithia Salts—290.
Tablets, Cold—281.
Tea—28.
Leather, to Clean—363.
Leatherette, Perfumes for—290.
Lemonade—62.
Lemon Beer—56.
Extract—95.
Extract, Soluble—95-261-274.
Ice Cream—313.
Kali—395.
Powder—288.
Sherbet—31.
Squash—54.
Soluble—325.
Sugar—90.
Syrup, with Acid—96.
Syrup, without Acid—96.
Lenses, to Clean—363.
Library Paste—261.
Lice Destroyer—412.
Lightning Renovator—372.
Lilac Water—229.
Lilly Baking Powder—257.
Lime Juice and Glycerine—240.
Sulphur and Salt Mixtures—254.
Linen, to Polish—364.
Liniments, Arnica—31, 32.
Colic—33.
Chilblains—44, 45, 46.
Cream, Cheap—319.
Cream of Camphor—33-296.
Cyclists,' Universal—33.
Electric—292.
German Oil—31.
Horse, English—158.

Liniments, Horse, K. K. K.—158.
Hydride of Amyl—34.
Iodide of Ammonia—32.
Indian—32.
Kastagon—292.
K. K. K.—158.
Methyl Salicylate—310.
Nerve and Bone—33.
Ringworm—33.
Roberts' Ready Relief—33.
Red Nose—32.
Rheumatic—23.
Ringworm—33.
Roberts'—33.
O. K., Soap and Iodide of Potash—34.
Sprains—32.
Stimulating—160.
Stokes' Chest—33.
Stokes' Rheumatic—33.
White Oils—32.
Wire Fence—158.
Lip Salve, Rose—247.
Liquid Soap—309.
Splints—290.
Sulphur—280.
Liquor, Arsenicalis Insecticide—256.
Eastoni—70.
Potassa—73.
Lithia and Potash Powders—75.
Salts, Laxative—290.
Lithiated Hydrangea—73-323.
Liver Invigorator—28.
and Kidney Cure—28.
Lobelia Mixture—19.
Lotions—242, 243, 244, 245.
Acetic—242.
Acctic Acid—242.
Acetate of Lead—242.
Alum—243.
Arsenical, A—243.
Arsenical, B—243.
Arsenical, C—243.
Bichloride of Mercury—243.
Borax, A and B—243.
Cherry Laurel—243.
Cole's—412.
Dermaline—244.
Eczema—246.
Emollient—244.
Face Lotion—244.
Freckle—244-309.
Glycerine—244.
Gowland's—244.
Horseradish—244.
Iodide of Potash—244.
Kastagon—292.
Lemon Juice—245.
Milk of Roses—245.
Mosquito—245.
Lotions, Stimulating—160.
Sulphuretted—245.
Sunburn—245.
Lovage—62.
Lozenges—409, 410, 411.
Aperient—31.
Bath—410.
Black Currant—410.
Bronchial—411.
Cough No More—410.
Coltsfoot—410.
Ginger—410.
Peppermint—410.
Rose—411.
Worm—50.

Machinery, to Clean—364.
Magic Eye Salve—295.
Toothache Drops—51.
Magnesia Lemonade Powders—20.
Sulphate, Tasteless Sol. of—267-310.
Orgeat Powder—20.
Mahogany, to Clean—364.
Stain—88.
Malate of Iron, Solution of—72, 73.
Manicure Preparations—436.
Maple Beer—56, 57.
Syrup Flavor—429.
Marble, to Clean—364, 365.
Marking Ink Stains—336.
Ink, Black—332.
Ink, Crimson—83.
Marmalade, Scotch—90-296.
Marrow Pomade—283.
Martindale's Phosphorus Pills—66.
Matting, to Clean—365.
Mayer's Ointment—37.
McNamara's Cancer Powder—313.
Mead Extract, Soluble—99.
Syrup—99.
Measurement of Cisterns—425.
of Lumber—424, 425.
of Paint—425.
of Stone and Brick—425.
Mercurial Ointment—35.
Metal Polishing Liquid—280.
Meat Preservative—89-277.
Melisse Oil—227.
Water—229.
Menthol Pastilles—65.
Methyl Salicylate Lint Co.—310.
Mexican, Extract of Sarsaparilla—4.
Migraine Powder—25.
Mildew—366, 367, 368.
Milk and Coffee Stains, to Remove—368.
of Roses—239.
Mixed Spices—90.

Mixed Spices, for Pickles—90.
Mixture, Antiseptic—40.
Antirheumatic—23.
Asthma—20.
Asthma, Potter's—20.
Bismuth—13-25.
Bronchitis—16.
Carminative—13.
Children's Cough—13.
Cough—13.
Diarrhoea, Squibb's—40, 41-271-320.
Dioscorea—9.
Freezing—312.
Stomachic—13.
Taraxacum Co.—31.
Whooping Cough—13.
Mocking Bird Food—159.
Model Headache Powder—275.
Molasses Beer—57.
Morphine Elixir—266.
Mosquito Lotion—245.
Oil—78.
Mucilage Acacia—82.
Cheap—263.
Dextrin Acid—443.
Dextrin Alkaline—443.
Stick, White—82-443.
Mud Stains, to Remove—335.
Muslins, to Cleanse—372.

Nail Polisher—290-436.
Varnish—290.
Nerve and Bone Liniment—33.
Pills—24.
Tonic—7.
Nervinola—24.
Nervousness, Female, Tonic for—24.
Nervo-Valeria—24.
Neuralgic Mixtures—23, 24.
Ointment—38.
Pills—12-65.
Pills, Brown, Sequard's—66.
Powder—24.
Remedies—23, 24.
Neutralizing Cordial—76.
Nomenclature—431.
North of England Cough Syrup—17.
Sauce—93.
Noyeau Cordial—61.
Powders—31.
Number 100—264.
Numerals—430.
Nursery Insecticide—78.

Oatmeal, Italian—308.
Oily Application for Baldness—272.
Oil, Castor, Aromatic—316.
Cloths, to Renovate—369.
Oil, Haarlem—282.
Melisse—227.
for Mosquitoes—78.
Stains, to Remove from Paper—369.
Ointment, Barbers' Itch—36.
Blistering, for Horses—36.
Boils, for—36.
Carbolic—35.
Chapped Hands—36.
Chrysarobin—311.
Creosote—39.
for Burns—324.
Glycerine—35.
Healing—36.
Indian Cerate—39.
Iodide of Iron—35.
Iodide of Potash—36.
Iodide of Sulphur—323.
Iodine—35.
Itch—34-283.
Itch, Barbers'—36.
Kraemer's Pile—34-36.
Mayer's—37.
Mercurial—35.
Neuralgic—38.
Nits, for—36.
Piles—34-39.
Screw Worm—38.
Severe Burns—324.
Simple—38.
Spermaceti—39.
Sulphur—38.
Universal—327.
White Wax—38, 39.
Witch Hazel—36.
Opodeldoc Arnica—33.
Liquid—37-285.
Solid—285.
Steers—37.
Orangeadine—424.
Orange Bitters—6, 7-61.
Extract, Soluble—95-325.
Wine, Artificial—9.
Wine, Fermented—275.
Wine, Genuine—53.
Wine, Unfermented—275.
Ordinals—430, 431.
Oriental Rouge—239.
Ottawa Beer—57.
Oxide of Zinc Jelly—100.

Pancake Flour—280.
Pain Balm—263-267.
Painless Tooth Extraction—52.
Paint Grease, Theatrical—308.
for Toothache—51.
Brushes, to Clean—369.
Covering Capacity—425.

Paint, to Clean—369.
for Flies—78.
to Remove—370, 371.
Remover, Lightning—443.
Tints, to Mix—426.
Toothache—51.
Paintings, to Clean—371.
Pancake Flour—280.
Papier Mache Renovation—371.
Paraffin Oil, to Extract from Floors—371.
Parchment, to Clean—372.
Paregoric—328.
Parrot Seed—159.
Paste, Anchovy—437.
Blacking, for Shoes—87, 88.
Blacking, for Stoves—87, 88.
Cubeb—43.
Pastilles, Menthol—65.
Pastilles 25—78-238.
Peach, Extract of—98.
Peanut Butter—273.
Pearls, to Clean—372.
Pectoral Elixir—16.
Peppermint Cordial—60.
Extract—97.
Lozenges—324.
Pepsin Essence—266-276-324.
Glycerole—262-292-324.
Lactated—324.
Wine, A—10.
Wine, B—10.
Peppermint Cordial—60.
Pepsin Powder Co.—324.
Percentage Solutions—67-70.
Persian Balm—307.
Perfumes for Fumigating—237.
for Hair Oil—249.
for Leatherette—290.
for Soap—267.
Perfumes, Preparation of—208, 209.
Perfumery, Good, Ardeola Bouquet—210.
Bergamot Extract—210.
Bouquet, Caroline—210.
Bouquet, Essence—210.
Bouquet, Tip Top—210.
Bouquet, Bridal—210.
Bouquet, D'Amour—211.
Bouquet, Carthage—211.
Carnation Pink—272-299-302.
Clove Pink—211.
Citronelle Rose, Cheap—211.
Crab Apple—211-272-297, 298, 299-303.
Cremorne Valley—211.
Enchantment Bouquet—211.
Framlingham—212.
Frangipanni—212-298.
Perfumery, Good, Hedyosmia—212.
Heliotrope—212-298, 299.
Honeysuckle—212.
Hyacinth—300.
Imperial Bouquet—213.
Jasmin—213-300-303.
Jess—213.
Jockey Club—213-298-300-302.
Jockey Club, Concrete—298.
Johnny Jump Up—213.
Kensington Bouquet—213.
Lilac, White or Purple—214-297, 298, 299.
Lily of Valley—214.
Linden Bloom—214.
Lucca Bouquet—214.
Mary Stuart—214-298.
May Blossom—214.
Mignonette—214.
Millefleurs—214.
Moss Rose—215.
Musk—215.
Musk Rose—215.
New Mown Hay—215-300-303.
Night Blooming Cereus—215.
Opoponax—215.
Orange Blossom—300-302.
Orange Flowers—216.
Oriental Bouquet—299-392.
Our Own—216.
Patchoulie—216.
Pearl of Pekin—216.
Perfection—216.
Persian Pink—216.
Pink—216.
Pink Clove—216.
Pond Lily—216.
Prairie Blossom—217.
Rondeletia—217.
Rose—217.
Rose Cashmere—217.
Rose Geranium—217-300-302.
Sandalwood—217.
Spring Flowers—217.
Spring Posey—217.
Sweet Brier—218.
Sweet Cloves—218.
Sweethearts' Garland—218.
Sweet Pea—218.
Sweet Shrub—218.
Tea Rose—218.
Tuberose, A—218.
Tuberose, B—219.
Union Bouquet—219.
Upper Ten—219.
Vandeventer—219.
Venetian Lily—219.
Violet—219-300-302, 303.
Violet Water—303.

Perfumery, Good, West End—219.
White Lily—219.
White Rose—220-299.
White Rose, Extra—298.
Woodbine—220.
Wood Violet—220.
Ylang Ylang—220-298.
Perfume Tinctures, Manufacture of—223.
Ambergris—224.
Ambrette Seeds—224.
Angelica—224.
Arcadian Pink—297.
Benzoin—224.
Civet—224.
Cloves—224.
Coumarin—224.
Curcuma—224.
Heliotrope—224-297-302.
Ionone—224.
Lily, Concentrated—297.
Musc, Artificial—224.
Musk—224.
Neroli, Big—225.
Neroli Petale—225.
Nutmegs—225.
Orris—225.
Red Saunders—225.
Rose Geranium—225-297.
Sandalwood—225.
Styrax—225.
Tolu—225.
Tonka—225.
Tonka, from Coumarin—226.
Vanilla, from Bean—226.
Vanillin—226.
Verbena—226.
Vetivert—226.
Perfumes, Cheap, Alpine Bouquet—221.
Bordentown Bouquet—221.
Bouquet, Essence—221.
Bouquet D'Amour—221.
Brighton Nosegay—221.
Carnation Pink—299-302.
Crab Apple—299-303.
Clove, Pink—222.
Everlasting Bouquet—222.
Frangipanni—222-299-303.
Heliotrope—222-299-302.
Hyacinth—300.
Jasmin—300-303.
Jockey Club—222-300-302.
Lilac, White or Purple—222-299-302.
Lily of the Valley—299-303.
Mary Stuart—222-299.
Moss Rose—222.
Musk, Cheap—223.
Musk Rose—223.
Perfumes, Cheap, New Mown Hay—300-303.
Orange Blossoms—300-302.
Oriental Bouquet—299-302.
Rose Geranium—300-302.
Tea Rose—223.
Violet—272-300-302, 303.
White Rose—223-299-303.
Ylang Ylang—223-298-303.
Perfumes, Solid Bouquet—220.
Cologne—221.
Lavender—220.
White Rose—220.
Perspiration Deodorant—429.
Powder—291.
Peruvian Beer, Carbonated—57.
Petroleum Pomade—305.
Pharaoh's Serpents—267.
Phenol, Iodized—320.
Phos. Muriate of Quinine Syrup—277.
Phosphate of Soda, Solution—324.
Phosphorox Tonic—325.
Phosphorus Pills—66.
Rat Paste—78.
Pickles, Spice for—90.
Pigeons, Treatment of—201.
Canker—202.
Feather Lice—202.
Lice—202.
Mites—202.
Molting—202.
Parasites—202.
Pouters—202.
Roup—202.
Scouring—202.
Scrofula—202.
Sore Eyes—203.
Ticks—202.
Vertigo—203.
Wasting—203.
Pigs—Diseases of, Treatment—195.
Appoplexy—195.
Bleeding—195.
Cold—195.
Colic—196.
Constipation—195.
Cough—196.
Diarrhoea—196.
Dropsy—196.
Epilepsy—196.
Eye Diseases—196.
General—195.
Gripes or Colic—196.
Hipshot—196.
Inflammation of Brain—197.
Inflammation of Lungs—197.
Loss of Tail—197.
Madness—197.
Maggots in Ear—197.
Measles—197.

Pigs, Nasal Catarrh—198.
Pocks—197.
Quinsey—198.
Running Fire—198.
Scab—198.
Sores, Sprains—199.
Spleen—199.
Splenitis—198.
Sprains and Bruises—199.
Stye—199.
Swine Fever—199.
Vomiting—199.
Worms—199.
Phosphorox Tonic—325.
Pilocarpine Pomade—437.
Pineapple Extracts—97.
Pinus Canadensis—266.
Plaster Epithelioma—310.
Plant Lice Destroyer—412.
Pile Ointments—34-38, 39.
Pills, Anaphrodisiac—274.
Antibilious—64.
Antimalarial—66.
Arsenical—64.
Bronchitis—20.
Chill—66.
Chronic Constipation—64.
Digestive—65.
Distemper—159.
Dog—159.
Gravel and Lumbago—65.
Little Liver—65.
Mange—159.
Neuralgic—12-65.
Neuralgic, Brown, Sequard—66.
Phosphorus—66.
Phosphorus, Martindale's—66.
Roback's—64.
Sir Andrew Clark's—64.
Spermattorhoea—65.
Toothache—65.
Plush, to Renovate—372.
Polish, Brazillian—277.
Brown Shoe, A—88.
Brown Shoe, B—88.
Furniture, French—88.
Liquid—88.
Liquid Shoe—88.
Polishing Paste, for Brass—85, 86.
for Silver—86.
Pomade, Dandruff—247.
Petroleum—305.
Pilocarpine—437.
Scurf—247.
Stick—248.
Stick, Coudrey—248.
Poppy Elixir Co.—325.
Pork Flavoring—91.
Potassa Liquor—73-116.
Pots, Iron, to Clean—372.
Poultry Diseases, Appoplexy—199-201.
Baldness and White Comb—199.
Catarrh and Roup—200.
Crop Bound—200.
Diarrhoea—200.
Douglass Mixture—200.
Powder—156.
Spice—159.
Vertigo—200.
Worms on Head—200.
Powder, Acetanilid—40-265.
Antipain—40-265.
Antiseptic—316.
Aromatic Chalk—312.
Bay Rum—308.
Caffeine Seidlitz—75.
Cancer—310.
Cattle Fattening—308.
Concretes—308.
Cooling and Teething—48, 49.
Gold Plating—312.
Prefixes, Chemical—431, 432, 433.
Preservative for Fruit—89.
Meat—89.
Vegetables—89.
Preston Salts—76.
Prune Juice—263.
Psoriasis Salve—325-444.
Punch—55.
Purgative Tablets—29.

Quinine, Baby, A—23.
Baby, B—26.
Chocolate—318.
Disguiser—412.
Hair Darkener—314.
Hair Grower—314.
Hair Tonic—307.
and Iron Mixture—9.
Tasteless Syrup of, end of notes.
Tasteless Syrup of, 5 grs.—262.

Rabbits, Diseases of—203.
Liver Complaint—203.
Pot Belly Dropsy—203.
Red Water—204.
Rot—205.
Snuffles—205.
Raspberry Cordial—61.
Extract of—96, 97.
Jelly, Concd.—279.
Vinegar—53.
Wine, Essence—54.
Raspberryade Powder—30.
Raspberry Vinegar—53.
Rat Poison—77, 78.
Razor Paste—436.

Red Clover, Extract of—21.
Red Drops, German—71.
Red Nose Liniment—32.
Red Wash Injection—43.
Renovator, Blood—281.
Rheumatic and Gout Cures—23-253.
Thomas'—23.
Liniment, Kastagon—292.
Liniment, London—23.
Liniment, Stokes—33.
Remedy—295.
Tablets—258.
Rhubarb and Pancreatin, Alkaline—315.
Wine of—11.
Ringworm—12-283.
Liniment—33.
Roach Exterminator—269.
Paste—269.
Powder—77-263-295.
Roback's Bitters—5.
Pills—64.
Roberts' Ready Relief—33.
Robson's Blood Purifier—2.
Rock Candy, Horehound and Tolu—14.
Root Beer—57, 58.
Beer Essence—274.
Ropes, Preservation of—367.
Rose Extract Flavoring—98.
Eye Water—43.
Tooth Paste—251.
Rubber Cement—312.
Rouge, Oriental—239.
Rugs, to Clean—373.
Rum, Shrub—60-437.
Rust, Black Ink, to Remove—373.
Iron, to Remove—373-413.

Saccharin Solution—70, 71-285-324.
Sachet Powders—230-237.
Saffron Syrups—101.
Salad Dressing—268, 288.
Salicylic Acid Compound—23-326.
Mixture—23.
Preservative Powder—89.
Saline—395.
Salol Emulsion—287.
Sal Santol—325.
Salt, Brown Gravy—91.
Celery—91.
Cheltenham—395.
Effervescent Purgative—29, 30.
Lemon—258.
Preston—76.
Sorrel—311.
Uses of—422, 423, 424.
Salves, Arnica—34.
Boracic Acid—35.
Carbolic—35.
Salves, Corn—47.
Eye—37-285.
Itch—36.
Pile—34-38, 39, 40.
Stick—37.
Universal—327.
Salad Dressing—268.
Samson's Bitters—5.
San Jose Scale Killer—253-256.
Santal, with Cubeb and Buchu—42.
Santalwood Emulsion—43.
Santonine Comp. Powder—13.
Lozenges—50.
Sarsaparilla—1.
Beef and Celery—4.
Flavor—284.
De Vitt's—288.
Extract—2.
Extract, Mexican—4.
Extract, New Mexican—264.
Purgative—4.
Purifier—2.
Syrup of—1-283.
Satins, to Clean—373-377.
Sauce, Barsaloux—93.
Crofts'—91.
Delmonico—92.
Digestive—92.
East India—92.
Epicurean—270.
Imperialist—271.
North of England—93.
That's Just as Good—314.
Yorkshire Relish—92, 93.
Sausage Flavors—91.
Saw Palmetto and Santal Co.—326.
Savory Spices—91.
Scale Killer, San Jose—253-256.
Scotch Marmalade—90.
Scouring Liquid—373.
Screw Worm Ointment—38.
Sea Foam—246.
Sealing Wax—262.
Seasoning Ham Sausage—91.
Universal—91.
Sedative Liquor—71.
Seidlitz Powders, Caffeine—75.
Sweet—75.
Self Raising Flour—294.
Seed, for Parrots—159.
Serial Number, to Obtain—429, 430.
Shampoo, Dry—246.
Liquid—246, 247, 438.
Powder—289-305.
Shaving Cream—248-309.
Powder—436.
Shawls, to Clean—375.
Sheep Diseases, Consumption—186.
Cough—186.

Sheep, Diarrhoea—186.
Foot Rot—187.
Giddiness—187.
Hog Pock—187.
Hoven—187.
Inflammation of Brain—188.
Jaundice—188.
Lice—188.
Red Water—188.
Rot—188.
Scab—188.
Small Pox—188.
Swollen Udder—189.
Wens or Tumors—189.
Wild Fire or Sore Lips—189.
Worms—189.
Sherbet, Lemon—31.
Shirts, Laundrying of—375, 376.
Shoe Blacking—87-89.
Dressing—264.
Polish, Liquid, Black—88.
to Clean, Kid—377.
to Clean, White Satin—377.
Show Windows, to Clean—377.
Shrub Rum—60-437.
Silk Cleaner—377.
Silver, to Clean—86-378.
Silver Nitrate Stains, to Remove—379.
Plating Paste—86.
Silverine Solution—84, 85, 86.
Simple Ointment—38.
Syrup—100.
Sir Andrew Clark's Pills—64.
Skeletons, to Prepare and Bleach—379.
Smelling Salts—76.
Smoke Essence—277.
Soap, Bark Foam—99.
Cocoanut—443.
Liquid—309.
Making—385, 386
Perfumes—267-326.
Powders—443.
Remover, Stains—379.
Soft—261.
to Remove Stains—379.
Transparent, Liquid—309.
Soda Powder, Borated—443.
Crystal—443.
Soldering Fluid—268.
Solidified Copaiba—43.
Glycerine—242.
Soluble Lemon—261-274-285.
Oils, Absorbent Cotton—285.
Orange—95.
Solution Saccharin—70, 71-285-324.
Salicylic Acid, for Fruit Preserving—99.
Soda Labarraques—385.
Soda Phosphate—294-324.
Solution, Storm Glass—72.
Strychnine, Hall's—72.
Sulphate Magnesia, Tasteless—310.
Solutions, Percentage, Tables for—67-70.
Soluble Lemon, for Bottlers—325.
Orange, for Bottlers—325.
Soothing Powder, Children's—48.
Powder for Children when Relaxed—49.
Syrups—48.
Syrup, with Morphine—48.
Syrup, non-Poisonous—48.
Syrup, without Opium—47.
Soup Herb Powder, Kitchener's—91.
Southern Chill Cure—295.
Spavin Cure—158.
Specific Gravity, to Determine—329.
Spermaceti Ointment—39.
Spermattorrhoea Pills—65.
Spices, Mixed—90.
for Pickles—90.
Savory—91.
Spirit Beading—63.
Gum, for Attaching Beards—437.
Tables—258-261.
Dovers Powders—262.
Solution of Acid Phosphates—59.
Acetate of Ammonium—114.
Acetate of Ammonium, Strong—115.
Aloes and Soda—114.
Arsenous Acid, Acid—114-316.
Arsenous Acid, Alkaline—70-316.
Bismuth, Citrate and Ammonia—115.
Bismuth and Hydrastia—316.
Chloral Co.—73-318.
Citrate of Magnesia—73.
Donovan's—74.
Dovers Powders—262.
Ferric Salicylate—72.
Four Chlorides—115.
Fire-proofing—311.
Fowler's—73.
Hydrangea, Lithiated—73.
Hydrastis, Colorless—116.
Iod. of Iron Br.—102.
Iod. of Iron—102.
Iron, Manganese and Pepsin—323.
Iron, Manganese, Pepsin and Arsenic—323.
Lime, Chlorinated—116.
Magnesia Citrate—73-115.
Magnesia, Tasteless—267-310.
Malate of Iron—72.
Morphine, Acetate, Br.—116.
Phosphate of Soda—324.
Potash—73-116.

Splint, Liquid—290.
Sponges, to Bleach—264.
to Clean—380.
Spots and Stains, to Remove—380-382.
Sprains, Liniment for—32.
Spring Blood Renovator—284.
Spruce Beer—58, 59.
Squills, Syrup of—101.
Stain, Mahogany—88.
Stains and Grease, to Remove—332 to 382.
Standard Cough Syrup—14.
Starch, Gloss—270-384, 385.
Steel Welder—413.
Steer's Opedeldoc—37.
Stick, Blue—257-272.
Stick Salve—37.
Sticky Fly Paper—77.
Stimulant, Hepatic—322.
Stoke's Expectorant—441.
Liniment, Chest—33.
Liniment, Rheumatic—33.
Stomach Bitters—273.
Stomachic Mixture—13.
Stones, to Clean—382.
Storm Glass, Solution for—72.
Stoughton Bitters—6.
Stove Blacking—86, 87.
Paste—87, 88.
Straw, to Clean—312-335.
Hats, to Clean—312.
Strawberry, Extract of—97.
Strychnine Solution, Hall's—72.
Styptic Colloid—72.
Sugar of Lemon—90.
Vanilla—96.
Sulphate of Magnesia, Tasteless—267-310.
Sulpho Saline, with Iron—30.
Saline Salt—30.
Sulphur Balsam—282.
Liquified—280.
Ointment—38.
Sun Cholera Mixture—42.
Sun Flower Seed Syrup—291.
Suppositories for Piles—39, 40.
Sweet Seidlitz Powders—75.
Syntol's Concentrated Perfumes—300, 301.
Syrup of Acacia Gum—103.
Allii—103.
Anise—48.
Apomorphine Hyd.—103.
Asafetida—103.
Asthma—20.
Aurantii—103.
Baby's Cough—317.
Blackberry—103.
Blood and Liver—4.
Syrup of Buckthorn Bark—103.
Calcium Lactophosphate—103.
Calcium Phosphate—104.
Calcium Phosphate, Wiegand's—104.
Children's Cough—328.
Croup—319.
Castanea—104.
Castroilina—29.
Chloral Hydrate—104.
Chocolate and Coffee—310.
Chocolate and Quinine—318.
Figs—29.
Ginger Ale—99.
Glycyrrhizin—104.
Hive and Eucalyptus Co.—322.
Hydriodic Acid—258.
Hyoscyami—48.
Hypophosphite of Calcium—105.
Hypophosphites, Cloudy—323.
Hypophosphite of Calcium Manganese and Potassium—106.
Hypophosphites of Calcium and Soda—106.
Hypophosphites, Churchill's—104.
Hypophosphites Co.—105.
Hypophosphites Co., with Iron—105.
Hypophosphite, with Iron—106.
Hypophosphite of Manganese—106.
Hypophosphites, Parrish—105.
Hypophosphite, Sodium—106.
Iodide of Iron—101, 102.
Iodide of Iron— Tasteless—101.
Iodide of Iron and Am. Phosphate—107.
Iodide of Iron and Am. Tartrate—107.
Iron Citrate Codex—108.
Iron Ferric Chloride, A—107.
Iron Ferric Chloride, B—107.
Iron and Potassium Tartrate—107.
Iron Pyrophos Codex—108.
Iron and Quinine Iodides, A—107.
Iron and Quinine Iodides, B—108.
Iron and Sodium Albuminate—106.
Lemon, with Acid—96.
Lemon, without Acid—96.
Lobelia Eclectic—108.
Lobelia Thompsonia—108.
Manganese Iodide—108.
Manganese Phosphate—108.
Mead—99.
Mercury Iodide, Gibert's—108.
Mitchella Co., Eclectic—109.
Opiated Codex—109.
Opium and Ipecac—109.
Phos. Wine of Quinine—277.
Phosphates Co.—109.

Syrup of Prunes—263.
Quinine, Tasteless, 2 grains—262.
Quinine, Tasteless, 5 grains—262.
Rhubarb, Aromatic—110.
Rhubarb and Potash—109.
Saccharin—110.

Tasteless Chill Powder—27.
Chill Tonic—27.
Quinine Syrup, 2 grains—262.
Quinine Syrup, 5 grains—262.
Worm Powder—50.
Taylor's Solution of Four Chlorides—115.
Tea Flavor, Improved—280.
Teas, Medicinal—28.
Hair—307.
Teaberry Hair Grower—314.
Teething Powders—48-293.
Terminations, Chemical—433, 434.
Terramentholine—266-327.
Terpeneless Oils—444.
Terpin Hydrate, Elixir of—327.
Thielman's Cholera Drops—42-282.
Thomas' Rheumatic and Gout Cure—23.
Thymol Spirits Co., Br.—293.
Iodide—310.
Tincture Aloes and Soda—114.
Astringent—441.
Burdock Seed—441.
Cannabis Indica—441.
Cantharides Ethereal—442.
Cubeb, Ethereal—442.
Green Soap—442.
Green Soap and Tar—442.
Guaiac, Ethereal—442.
Hellebore—441.
Iodine, Ethereal—442.
Iodoform—442.
Jalap—442.
Jalap Co.—442.
Kino Co.—443.
Lobelia Co., Eclectic—111.
Lobelia and Capsicum Co.—111.
Lupulin—111.
Opium, Acetated—442.
Opium, Ammon—111.
Opium, Camphd.—111-328.
Poke Root, Eclectic—112.
Prickly Ash Berries, Eclectic—111.
Pulsatilla—112.
Quinine, Am.—112.
Quinine, Br.—112.
Rhubarb Co., Eclectic—112.
Rhubarb, Kohlenreuter's—112.
Rhubarb and Senna—442, 443.
Savin, Br.—112.
Savin Co., Eclectic—112.
Tincture, Serpentaria Co., Eclectic—112.
Shepherd's Purse, Rademacher's—113.
Skunk Cabbage, Eclectic—113.
Stavesacre—113.
Stillingia, Eclectic—113.
Strychnine, British—113.
Strychnine Co., Eclectic—113.
Sulphur, Hager—113.
Sulphur, Homeopathic—113.
Valerian, Ethereal—113.
Veratrum Viride—113.
Viburnum Co.—113.
Wahoo, Br.—114.
Witch Hazel Bark—114.
Wormwood, Ger.—114.
Wormwood Co.—114.
Tolu Extract, Soluble—100.
Tomato Catsup, A—90-281.
Tonic, Acid Mixture—8.
Acidulous—8.
Alkaline—8.
Blood Mixture—8.
Calisaya—7.
Chill, without Arsenic—310.
Glycerine—322.
Guaiac and Creosote—322.
Hair—264-322.
Hop—7.
Iron and Quinine—7.
Nerve—7.
Nervous Debility, for—7, 8.
Phosphorox—325.
Toothache, Anodyne—12-51.
Ball and Stopping—52.
Balsam—51.
Cordial, Robacks—52.
Drops—51.
Essence—52.
Extraction, Painless—52.
Gum—51.
Magic Drops—51.
Odontodol—52.
Paint—51.
Pills—65.
Remedies—51.
Tincture—51, 52.
Tooth Paste, Charcoal—251-305.
Cherry—251.
Rose—251.
Tooth Powder, Carbolic—252.
Fragrant—252.
Quinine—252.
Saponaceous—252.
Tooth Wash, Antiseptic—252.
Fragrant—252.
Odentolina—304.
Saponaceous—252.

Trade Mark, Forms—487, 488.
Law, 490, 491.
Registration—489.
Trifolium Syrup, of—2.
Turkeys, Diseases of, Treatment—200, 201.
Turpentine Emulsion—287.

Universal Bitters—293.
Seasoning—91.
Ointment—327.
Usquebaugh Cordial—62.
Uterine—265.

Vaginitis—40.
Vanilla Extract—95.
Cheap—95.
Coumarin and Vanillin—96.
Vanillin—96.
Oil—289.
Powder—288.
Vanilla Sugar—96.
Syrup—96.
Veterinary Formulas—162-204.
Treatise—162-204.
Formulas—162-208.
Alterative Powders—204.
Blisters, A., B. and C.—204.
Blister, Liquid—204.
Bran Mash—206.
Calves Cordial—205.
Cleansing Drench—205.
Condition Powders—205.
Cough Ball, A and B—205.
Diapente—205.
Diuretic Mass—205.
Elliman's Embrocation—205.
Eye Lotion—206.
Fever Balls, A and B—206.
Gripe Drench—206.
Lotions, Cracked Hoof—206.
Mange Liniment—206.
Oatmeal Gruel—206.
Ointment for Grease—206.
Ointment for Horses Knees—206.
Physic Mass—207.
Treatment of Distemper—207.
White Oil—208.
Woundstone—208.
Verbena Water—229.
Vinegar, Aromatic—230.
Celery—437.
Raspberry—53.
Rouge—230.
Toilet—437.
Violet, Double—272.
Triple—272.
Water—229.
Water, Cheap—303.
Vita Valorous Elixir—292.
Vegetable Cough Syrup—16.
Preservative—100.
Vermifuge Oil, Old Style—49.
Vermin Killer—77.
Veterinary Formulas—204.
Alterative Powder—204.
Blister—204.
Bran Mash—206.
Calves Cordial—205.
Cleansing Drench—205.
Condition Powders—205.
Cough Balls—205.
Diapente—205.
Diuretic Mass—205.
Embrocation, Elliman's—205.
Eye Lotion—206.
Fever Balls—206.
Gripe Drench—206.
Lotion for Cracked Hoofs—206.
Mange Liniment—206.
Oatmeal Gruel—206.
Ointment for Grease—206.
Ointment for Horses Knees—206.
Physic Mass—207.
White Oils—208.
Wound Stone—208.
Veterinary Remedies—155.
Viburnum Compound—9.

Walnut Catsup—437.
Juice Hair Dye (So-Called)—428.
Walton's Bitters—5.
Warren's Hair Restorer—306.
Wart and Corn Eradicators—47.
Mixture—266.
Wash Bluing—84.
Washing Compounds—382, 383.
Powder Compound—83-382.
Powder Compound—83-382, 383.
Jackman's—382.
Liquid—438.
Waters, Aromatic—386-388.
Water, to Clear—413.
Weed Killers—273-276-411, 412.
Weights, Equivalent to Calculate—392.
Whipped Cream—278.
White Oils, Liniment—32.
Pine Expectorant—15.
Wax, Ointment of—38, 39.
Whooping Cough Syrup—13.
Powders—49.
Syrup—319.
Wild Cherry Bitters—6.
Phosphate—267.
Window Polishing Paste—78.
Windsor Toothache Drops—51.
Wine of Aloes—388.
Wine, Aromatic—12.

Wine, Beef—10, 11.
Beef and Iron—10-116.
Beef, Iron and Cinchona—117.
Beef, Iron and Coca—117.
Beef and Malt—53.
Cinchona, Ger. Phar.—117.
Cinchona Co. Codex—117.
Cinchona and Cocoa—117.
Coca—9, 10.
Coca, with Kola Nuts—10.
Creosote—25-117.
Creosote Co.—117.
Damiana—10-118.
Damiana Co.—10.
Gaduol—74-321.
Ginger—53-275.
Golden Seal Co.—118.
Iron, Mitchell's—11.
Iron Bitters—5-11.
Iron and Potassium Tartrate—118.
Iron and Quinine Citrate—118.
Iron, Sweet—118.
Kola Coca—10.
Orange—Artificial—9-118.
Orange, Genuine—53-275.
Pancreatin—118.
Wine, Pepsin—10.
Quinine, Br. Phar.—118.
Raspberry Ess.—54.
Rhubarb—11.
Tamarack Bark—326.
Wormwood Codex—118.
Wire Fence Liniment—158.
Witch Hazel Eye Water—43.
Ointment—36.
Woods' Bitters—6.
Worm Cakes—50.
Lozenges—50.
Powders—50.
Powders, for Horses—157.
Remedies—50, 51.
Tea—267-275.
Syrup—49, 50.
Wormwood Bitters—61.
Writing Ink Stains—336.

Yellow Coloring—63.
Yerba Santa Syrup—283.
Yorkshire Relish—92, 93.

Zinc Cream, for Bromidrosis—47.
Jelly—100.

Roup Pills.

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Fine, ground Silica, enough to make
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